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Management Plan
For

Afton Canyon Natural Area

And The Surrounding Area

Barstow Resource Area
California Desert District
Bureau of Land Management
U.S. Department of the Interior

MAY 1989

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Management Plan
for the
Afton Canyon Natural Area
and
The Surrounding Area
(A Sikes Act Plan -- PL 93-452)

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Bureau of Land Management

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Bureau of Land Management

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Bureau of Land Management

PREFACE

The Afton Canyon area is one of those unique places in the California Desert where significant resource values have made it the focus of man's interest and activities. As one of only three places where the Mojave River flows above ground, it's riparian habitat and diversity of wildlife species are virtually unsurpassed. The scenic quality of this "green ribbon" of riparian vegetation and the multicolored stratigraphy of the canyon walls have led to Afton Canyon being described as "the Grand Canyon of the Mojave."

In 1980, an Afton Canyon Interim Management Plan was approved that provided interim direction for managing this unique area. Also in 1980, Afton Canyon was designated as an Area of Critical Environmental Concern (ACEC) through the California Desert Conservation Area Plan (Desert Plan) because of its outstanding natural and scenic values. Consistent with BLM policy, this ACEC is called the Afton Canyon Natural Area, an Area of Critical Environmental Concern.

This plan comes under the scope of the Sikes Act (P.L. 93-452) and, as such, will be implemented with the cooperation of the California Department of Fish and Game. The Afton Canyon planning area encompasses a larger area than the ACEC because it includes surrounding lands that have an influence on the resource values of the ACEC.

Since approval of the Desert Plan, recreation use in the Afton Canyon area has evolved in unacceptable ways. Indiscriminate and inappropriate off-highway vehicle use has caused unacceptable impacts to the riparian area and to visual resources. Target shooting in the canyon is a menace to visitor safety. Other practices have had adverse effects on the ecosystem of Afton Canyon.

In order to provide management direction consistent with the Desert Plan and the goals of protecting the resources of the Afton Canyon area, a decision was made to update the 1980 Afton Canyon Interim Management Plan. The plan you are reading is a result of that effort and provides protection of resource values in the area while allowing low-impact use to occur.

The BLM welcomes you to visit Afton Canyon and enjoy the natural features of this unique area.

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I. INTRODUCTION

A. Setting

The Afton Canyon planning area (Illustration 1) is located approximately 37 miles east of Barstow in central San Bernardino County, California. The planning area is accessible along I-15 from the Afton Road interchange on the west and Basin Road interchange on the east. The planning area boundary encompasses approximately 41,500 acres, of which about 23,600 acres (57%) are public lands administered by the Bureau of Land Management (BLM) (Illustration 2). The planning area includes the Afton Canyon Natural Area, an Area of Critical Environmental Concern (ACEC), and those public lands which have an influence on the ACEC. Information on resource values and public use in Afton Canyon is contained in Appendix B.

Afton Canyon was created in the last 19,000 years when Lake Manix drained and cut a spectacular landscape of badlands and exposed a multicolored stratigraphy. Since its formation, Afton Canyon has been a focus for wildlife and human activities. Reliable surface water is rare in the California Desert, and Afton Canyon is one of only three places where the Mojave River flows on the surface in the Mojave Desert. Afton Canyon is the only portion of the river with surface flow on public lands. The canyon is a home for diverse wildlife, a way station for migratory birds, and a refuge for riparian plants in the desert.

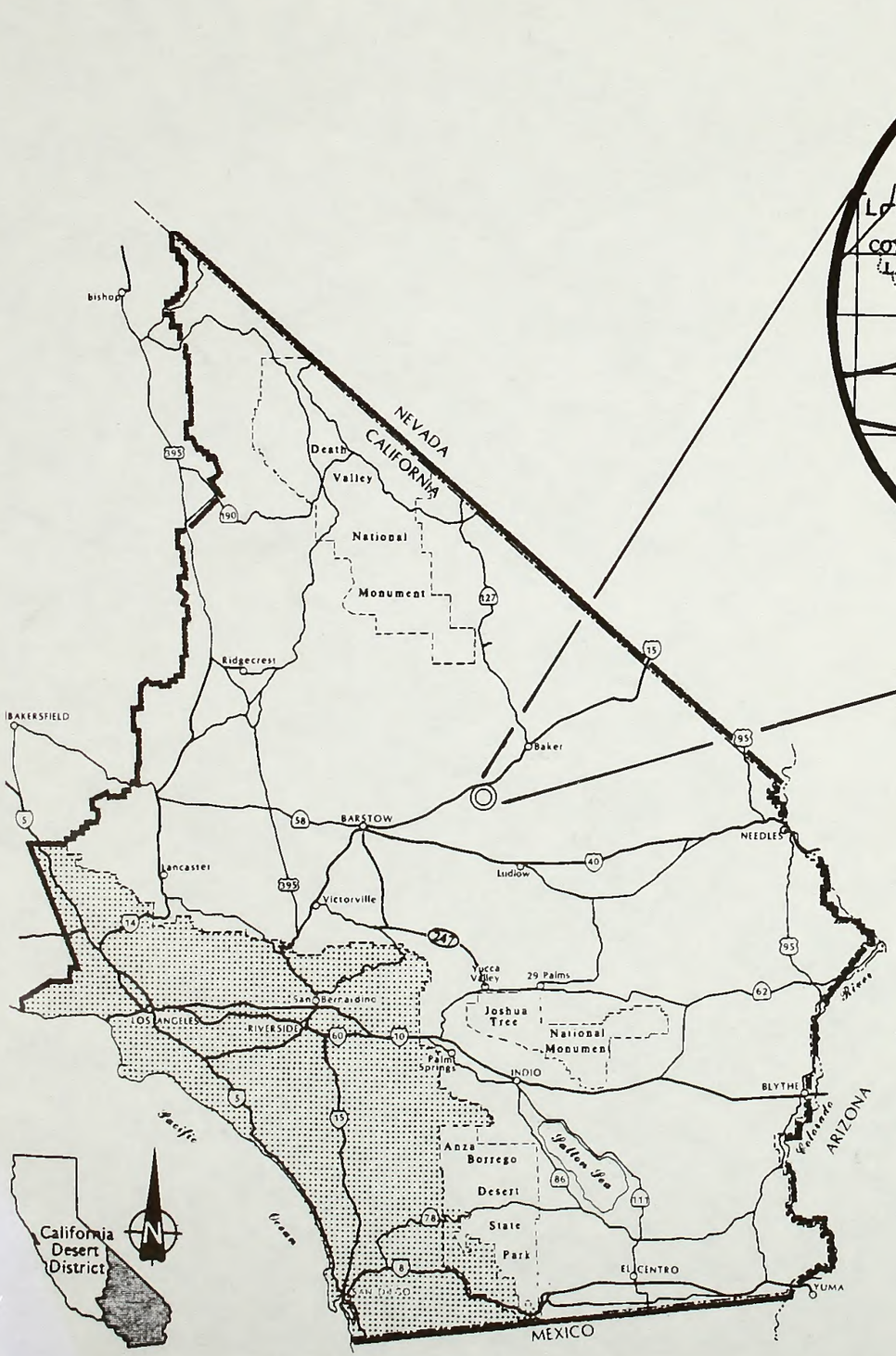
The beauty and natural bounty of Afton Canyon have made it a focus of human activity as long as people have been in the Mojave Desert. Native Americans came to Afton Canyon to live and used it as a resting place on the trade route to the Pacific Ocean. The first European who crossed the Mojave, passed through Afton Canyon in 1776. Jedidiah Smith, Kit Carson, and John C. Fremont traveled the canyon in the early 1800's and recommended it as a route that eventually became known as the Mojave Road. Since then, reliable water assured that the area would remain a focus of European and American activities in the California Desert.

Today, the Afton Canyon area remains a refuge for diverse wildlife and plants. It is also used for grazing, mining, birdwatching, hiking, hunting, camping, vehicle touring, natural history study, rockhounding, horseback riding, and general recreation.

B. Purpose

By its very nature, Afton Canyon needs special attention if it is to retain those unique features that have made it a focal point in the Mojave Desert.

The purpose of this management plan is to define long-term management goals for the Afton Canyon area and the management actions to meet these goals and to identify the cost and priority associated with each action.



AFTON CANYON PLANNING AREA

MANAGEMENT PLAN

LOCATION MAP

Bureau of Land Management
California Desert District
Barstow Resource Area

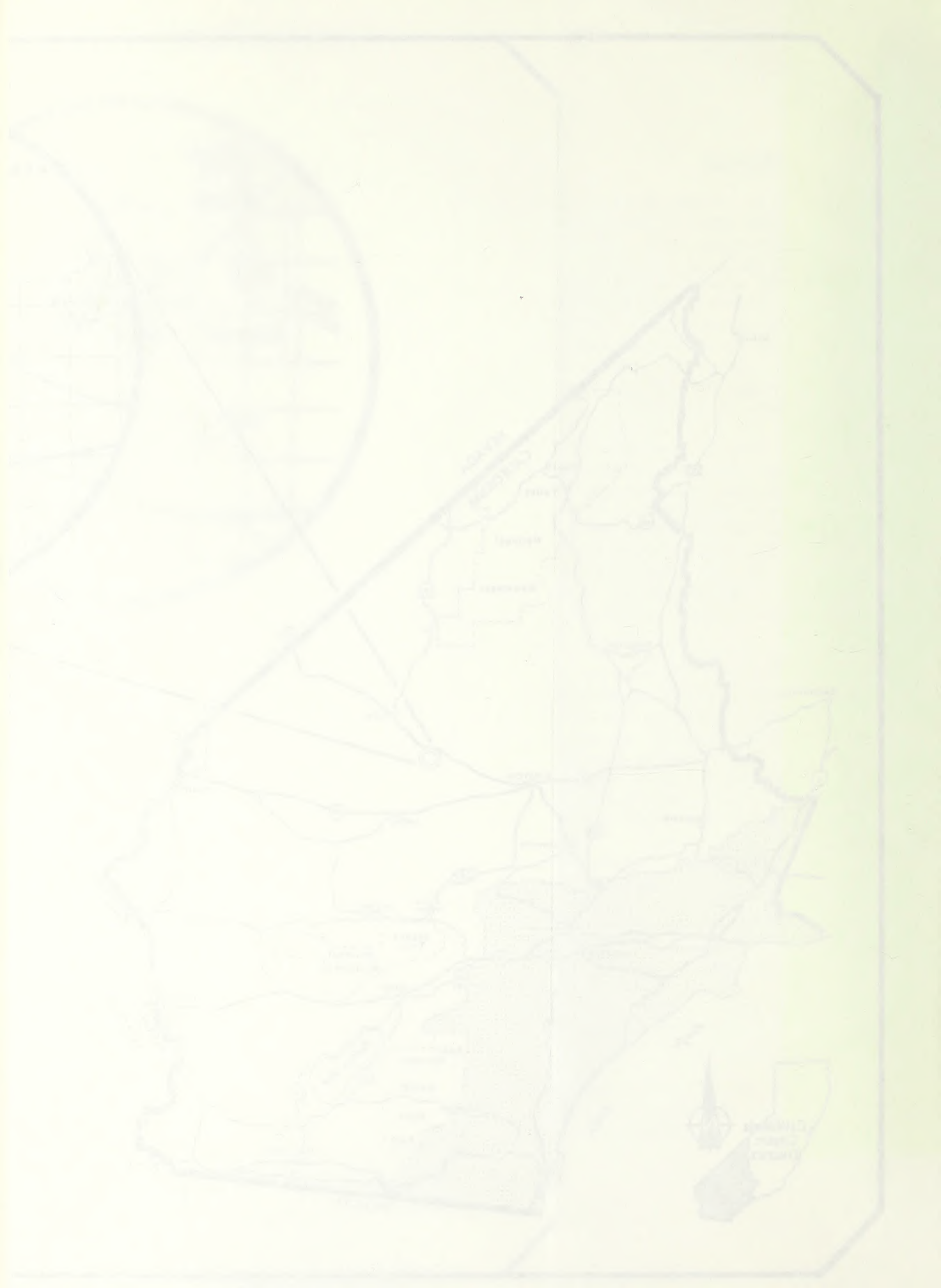


ILLUSTRATION 2

AFTON CANYON PLANNING AREA

MANAGEMENT PLAN

LAND STATUS

- Planning Area Boundary
- Public Land
- Private– Southern Pacific Land Co.
- Other Private
- Land not to be acquired

Bureau of Land Management
California Desert District
Barstow Resource Area

T12N
T11N
SBM
T10N
R5E
R6E
R7E
To Barstow
To Baker
New Dunn
Afton Cyn Road
Cronese Mountains
Cronese Valley
Cronese Basin Road
Cave Mountains
Mountain Pass
Afton Canyon
Mojave River

C. Management Background

Afton Canyon has long been recognized by the Bureau of Land Management and the public as a significant and unique natural area in the Mojave Desert. For many years, the Afton Canyon area has been given special management attention: in 1967, a portion of the area was designated as a highway scenic strip; in 1968, a portion of the area was segregated from mineral entry and a campground was developed; and in 1972, additional lands were withdrawn from mineral entry, and Secretary of the Interior Morton designated the entire area as the Afton Canyon Recreation Lands.

The Afton Canyon Interim Management Plan, approved in April 1980, provided additional management direction for the area. The Interim Management Plan recognized that "past experiences at Afton Canyon point out the desirability of regulating and protecting facilities, resources, and users within the area."

The Interim Plan established management goals to "manage recreation to resolve conflicts between various users, minimize adverse impacts on other resources, and provide for appropriate recreation uses consistent with good resources management practices."

The Interim Plan's goals were to be implemented so as to "Carry out the management of recreational activities with minimal intrusions and impacts on sensitive resource elements. The scenic, cultural, geological, biological and ecological values are all recognized as leading elements of the resources in the area."

The Interim Plan's major management direction for the Afton Canyon area was to:

1. Provide personnel to manage visitor use;
2. Protect wildlife habitat by closure to vehicles;
3. Allow vehicle use on designated routes only;
4. Allow camping in designated campgrounds only;
5. Allow campfires in designated campgrounds only;
6. Prohibit firewood collection;
7. Provide for group camping with equestrian facilities;
8. Prohibit firearms within 1/2 mile of designated campgrounds;
9. Provide interpretation of the Afton Canyon area through signs and guides.

During the California Desert Conservation Area (CDCA) planning process (1976-1980), Afton Canyon was nominated as an Area of Critical Environmental Concern (ACEC) to protect natural and scenic values in the area. The nomination noted that Afton Canyon is one of the few places where the Mojave River surfaces and sustains extensive riparian vegetation and diverse wildlife, including raptors and bighorn sheep. It also noted that Afton Canyon contains outstanding scenic quality due to the unique vegetation and spectacular erosional stratigraphy. These considerations suggested that special management attention associated with ACEC designation was needed for Afton Canyon.

In 1980, the Desert Plan designated Afton Canyon as an ACEC and directed that a management plan be prepared.

The Desert Plan included the following management prescriptions for the Afton Canyon ACEC:

1. Develop cooperative management agreements with the Southern Pacific Railroad and the Mojave Water Agency;
2. Remove tamarisk and replace it with native riparian species;
3. Provide a BLM presence full-time during weekends and peak use periods and investigate the potential use of volunteer caretakers;
4. Develop nature and access trails for foot and equestrian use;
5. Develop interpretive displays and materials;
6. Limit vehicle access to approved routes;
7. Eliminate motorized vehicle use off-road and in the campground.

Other actions in the Desert Plan affecting all or part of the Afton Canyon area included preparing an Allotment Management Plan for cattle grazing (completed 1983), a Habitat Management Plan for bighorn sheep (projected completion 1991), and a Wilderness Study Report (completed 1988) for the adjacent Cady Mountains Wilderness Study Area (WSA #251).

Within the parameters established in the Desert Plan (1980), the Interim Plan has guided recent management of the Afton Canyon area. The goals and actions of this updated plan (1989) are consistent with the management prescriptions of the Desert Plan for the Afton Canyon ACEC.

D. Planning Process

This plan is a reflection of past management experience in the Afton Canyon area. It also reflects the philosophy of the Interim Afton Canyon Management Plan (1980) and the California Desert Conservation Area Plan.

In addition, it is the result of a series of scoping actions taken by the BLM to involve the public in the planning process. These included the formation of a Management Advisory Committee (MAC) of interested public representatives who were asked to express their concerns regarding management in the area and suggest goals and actions to be included in this Plan. This group met three times in 1985 and developed a set of proposed management goals and actions that were included in a management option analysis. The management option analysis (1987) identified five alternatives that ranged from the MAC group's user-oriented alternative to the protection-oriented alternative identified in the CDCA Plan EIS.

The purpose of the management option analysis was to elicit additional public comment within the context of these five management alternatives. In addition to an extensive mailing, a public meeting was held in

Barstow, California during the public comment period. The public commented on a wide array of issues and raised new ideas concerning the management of the planning area.

Public comments on the management option analysis reflected two widely divergent perspectives on how the area should be managed. One perspective was very use-oriented and would sacrifice natural and cultural resource values in favor of increased recreation and public access. The other was very protection-oriented and would essentially turn the planning area into a preserve with no public access.

The public scoping and management option analysis review process resulted in the four management alternatives considered in the environmental analysis for this plan (page 44). These four management alternatives were presented to the public in the draft management plan in September 1988. The preferred alternative strikes a balance between use and protection. Sensitive resource values of the Afton Canyon area are protected and enhanced, while activities that are non-impacting upon these resource values can continue to occur.

The balance between use and protection is emphasized in the management direction for the Afton Canyon ACEC in the CDCA Plan. That direction clearly calls for management emphasis on rehabilitating and maintaining riparian and scenic values and shifting recreation from active motorized activity to low-impact, non-motorized activities.

II. MAJOR RESOURCE ISSUES

This section focuses on the major resource issues that need to be resolved through this plan. Resources not discussed here are not considered to be major issues. Minor resource issues will be resolved through the implementation of management actions to resolve the major issues. Appendix B is a detailed discussion of the resource values and current uses in the Afton Canyon planning area.

The primary resource issue identified by the public and addressed in this plan is the continued degradation of the riparian zone and its associated plants and animals. A second issue identified is the conflict between wildlife and human activity in the planning area. The third issue identified is the ongoing degradation of the visual resources in the planning area. The final issue identified is public safety.

A. Riparian Zone Use

From the earliest planning documents for Afton Canyon, vehicle free-play and unmanaged cattle grazing have been recognized as incompatible with maintaining a healthy riparian area. Vehicles

incompatible with maintaining a healthy riparian area. Vehicles driving through riparian vegetation in the stream channel destroy soil structure and vegetation, displace wildlife, disrupt nesting birds, create ruts, and silt waters. Inappropriate cattle grazing inhibits native vegetation, alters plant community composition, and competes with wildlife.

B. Wildlife

Intense, inappropriate vehicle use in the canyon and traffic in the southern portion of the planning area have limited bighorn sheep access to water in the riparian zone. Nesting raptors, unique amphibians, and migratory birds are also disturbed by inappropriate vehicle use in Afton Canyon.

If human and livestock disturbance were controlled and tamarisk was aggressively eradicated, native plants would revegetate the riparian zone. If native plants were reestablished through an active planting program, quality wildlife habitat would increase more rapidly.

Bighorn sheep access to water would improve as tamarisk eradication increases water flow through the canyon. If human activity in the canyon and the southern part of the planning area is minimized, bighorn sheep would use the tamarisk-free portions of the riparian zone year-round.

C. Visual Degradation

Prior to the proliferation of off-highway vehicle (OHV) use, Afton Canyon was a spectacular landscape of badlands, exposed multicolored stratigraphy, and a ribbon of green wetlands. Because of this increased OHV use, the visual condition of the area has been steadily degraded by vehicle route scars caused by OHV free-play. Vehicle routes have proliferated throughout the planning area. Vehicle tracks degrade the scenic values in the riparian zone, on both rims of Afton Canyon, on Cave Mountain, and in the Cady Mountains. The northwest portion of the planning area ("competition hill" and the dry camp area) has been especially scarred.

D. Public Safety

Target shooting is an increasingly popular activity in Afton Canyon and is taking place in areas of relatively high visitor use. This visitor concentration and target shooting are incompatible and pose a significant threat to visitor safety.

III. MANAGEMENT GOALS

The Afton Canyon planning area, including the Afton Canyon Natural Area, is to be managed to preserve and enhance the riparian, wildlife habitat, and scenic values, and public safety. Other resources and activities will be managed so as to avoid undue and unnecessary degradation of these resources.

The long-term management goals for the Afton Canyon planning area are to:

A. Improve the condition of, and maintain the extent of, riparian habitats in Afton Canyon in order to preserve in a quality condition the last Mojave River riparian habitat on public lands and keep it available for compatible activities.

B. Improve the condition of wildlife habitat in the planning area in order to assure healthy and stable populations of riparian dependent-wildlife, raptors, and the Cady Mountain bighorn sheep herd.

C. Improve the visual condition of the area to at least Visual Resource Management Class II in order to enhance visitor appreciation of this unique area.

D. Provide for low-impact recreation in a manner compatible with protection of sensitive riparian values, visual resources, wildlife habitat, and visitor safety.

E. Provide visitor services to enhance enjoyment of the Afton Canyon area, while protecting the unique and sensitive resource values found in the area.

These goals are fully compatible with the intent of the Afton Canyon Interim Management Plan adopted in 1980 and the management prescriptions for the Afton Canyon ACEC in the CDCA Plan (1980).

IV. MANAGEMENT ACTIONS

1. Amend the CDCA Plan to expand the Afton Canyon ACEC as shown in Illustration 3. This amendment will include private lands within the expanded ACEC boundary, when acquired, without further administrative action. (Goals A, B, and C)

ILLUSTRATION 3

AFTON CANYON PLANNING AREA

MANAGEMENT PLAN

AREA OF CRITICAL ENVIRONMENTAL CONCERN (ACEC)

- Planning Area Boundary
- Existing Boundary
- Expanded Boundary
- Existing Mineral Segregation

Bureau of Land Management
California Desert District
Barstow Resource Area

T12N
T11N
T10N
SBM
R5E
R6E
R7E
To Barstow
To Baker
New Dunn
Afton Cyn Road
Cronese Mountains
Cronese Valley
Cave Mountains
Basin Road
Afton Mountains
Cady Mountains
Mojave River
Midway
Dunn
Cronese
Basin
Afton
Cady

Discussion

The expanded ACEC would include the entire riparian zone, the visually significant portions of the adjacent uplands, and significant side canyons. When it was designated in the CDCA Plan, the existing Afton Canyon ACEC excluded private lands within the canyon and their associated resource values. This will be corrected by adding these private lands to the expanded ACEC as they come into government ownership.

The expanded ACEC designation will only affect private in-holdings after they are acquired. As these private lands within the expanded ACEC are acquired by the BLM, they will automatically become part of the ACEC and be managed under this plan.

The existing ACEC contains 4,800 acres. The expanded ACEC adds an additional 3,840 acres, while 480 are dropped from the existing ACEC. The size of the expanded ACEC is 8,160 acres.

2. Consolidate land ownership patterns in the planning area by acquiring private lands with important resource values. Refer to illustration 4 for the list of land acquisition priorities.

The following parcels would, to the extent they are now in private ownership, remain in private ownership:

1. T. 11N., R. 6E., Section 13, SBM;
2. T. 11N., R. 6E., Section 12, SBM.

These parcels contain the active CalMat mining operation and the Union Pacific Railroad Basin Siding. The BLM has no interest, now or in the future, in acquiring these properties.

Discussion

Fragmented ownership patterns render the planning area extremely difficult to manage. Consolidation of ownership will allow coordinated management under this plan.

The BLM plans to acquire private lands in Afton Canyon through a series of land exchanges. Isolated public parcels, usually near cities and developing areas, can be traded for private property in Afton Canyon. Exchanges are more cost efficient than direct purchases. An on-going land exchange with the Los Flores Ranch is the primary vehicle for land acquisition in this area and is expected to be completed in early 1990.

ILLUSTRATION 4 LAND ACQUISITION PRIORITIES

Priority	Legal Description	Ownership
1	San Bernardino Meridian, CA T.11N., R.5E. Sec. 1 Sec. 13 T.11N., R.6E. Sec. 17 Sec. 21: NE 1/4, SW 1/4	 Brian M. MacRoberts Santa Fe Pacific Realty Corp. (SFPRC) SFPRC SFPRC
2	T.11N., R.6E. Sec. 19, 23, 25, 27, 29 Sec. 33: N1/2N1/2 Sec. 36 T.10N., R.6E. Sec. 5	 SFPRC SFPRC Michael E. Cooper SFPRC
3	T.12N., R.6E. Sec. 33, 35, 36 T.11N., R.6E. Sec. 3, 5, 7, 11 Sec. 15: N1/2, W1/2SW1/4	 SFPRC SFPRC SFPRC
4	T.11N., R.5E. Sec. 12 Sec. 23, 25 Sec. 36 T.11N., R.6E. Sec. 1: S1/2 Sec. 9 Sec. 16 T.11N., R.7E. Sec. 19, 29, 31 T.10N., R.6E. Sec. 1, 9	 25 Private landowners SFPRC William & Monique Coleman SFPRC Josephine H. Meissner 10 Private landowners SFPRC SFPRC

3. Reconcile all segregations within the expanded ACEC to delete duplication and modify the protective withdrawal to assure that the expanded ACEC is covered by a minerals segregation. (Goal C)

Discussion

Portions of the existing Afton Canyon ACEC are already covered by protective withdrawals to ensure that its unique visual and recreational qualities are not degraded by mining. This protection should be extended to the entire expanded ACEC. As private lands within the expanded ACEC are acquired, they will be included in the protective withdrawal. Some of the segregations overlap, and these overlapping portions will be modified so that they are covered by only one segregation.

4. Contrary to the draft plan, motorcycles and all-terrain vehicles (ATVs) will not be prohibited in the expanded ACEC. This proposed action has been dropped from this plan.

Discussion

Limitations on motorcycles and ATVs will be the same as all other vehicles in the planning area. All vehicles will be restricted to routes that are designated as open. Strict enforcement of these route designations will eliminate free-play areas and eliminate vehicles from conflicts with sensitive resources. (See Action 5)

If these measures are not successful and the Afton Canyon area continues to be used for free-play by motorcycles and ATVs, prohibition of these vehicles will be initiated.

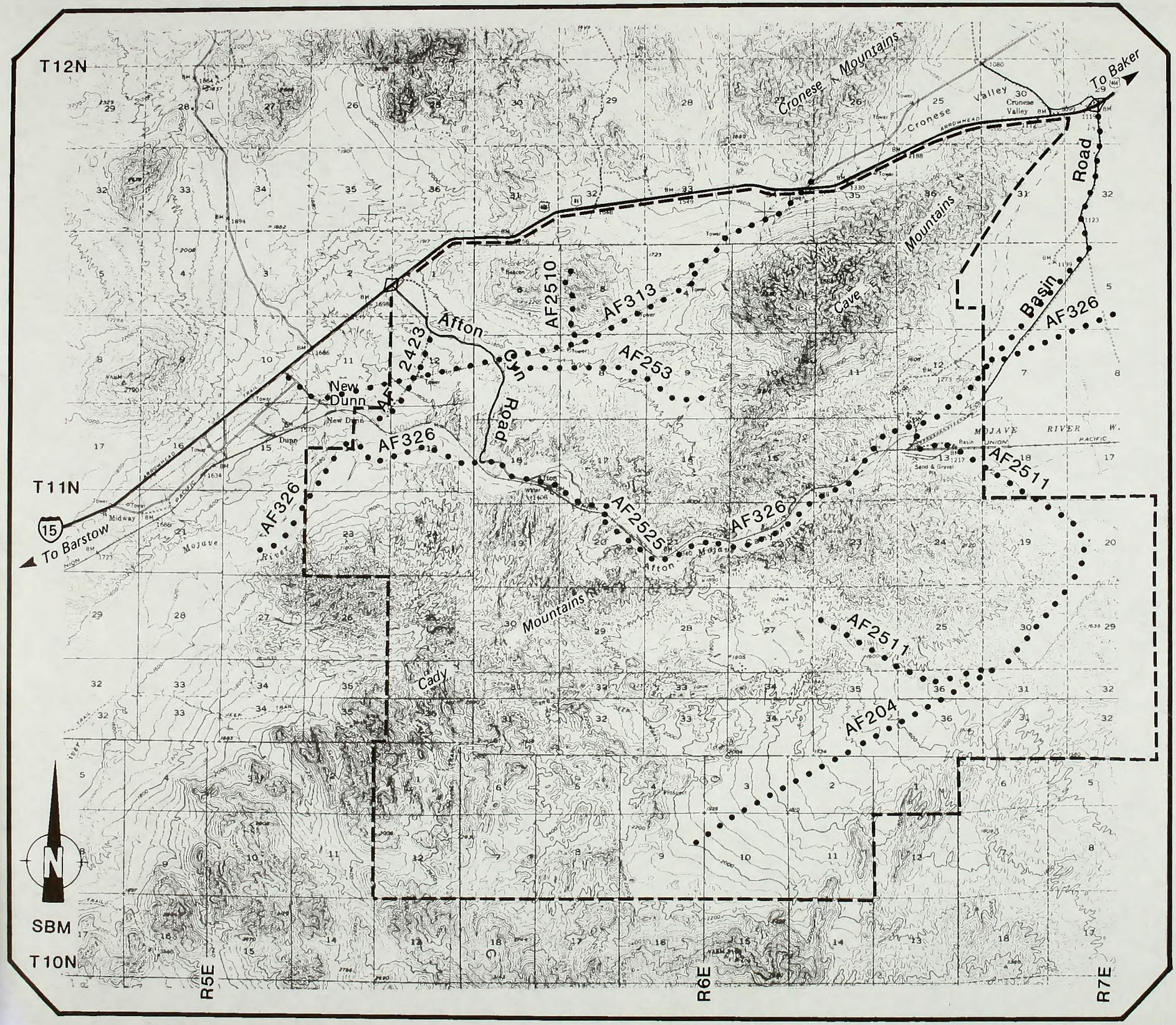
5. Designate routes AF313, AF2423, AF2510, AF2531, and portions of AF253, AF326, AF2525, AF2511, AF204, and AF2515 as open to vehicle use. Designate all other vehicle routes and washes as closed to vehicle use. (Goals A, B, C, and D)

Discussion

The open routes are on the north bench and in the southeast portion of the planning area and allow public access in the northwest, north central, and southeast portions of the planning area.

The access pattern proposed provides for access to the campground, the north bench, the southeast, and through-travel on the Mojave Road (Illustration 5). It restricts vehicular access in other areas to protect sensitive riparian, wildlife, and scenic values. Appendix D contains the Vehicle Route Designation Records of Decision for the Afton Canyon area and Illustration 6 documents existing vehicle routes as of 1988.

ILLUSTRATION 5



AFTON CANYON PLANNING AREA

MANAGEMENT PLAN

OPEN ROUTES

- Planning Area Boundary
- Open Route
- County Road

Bureau of Land Management
California Desert District
Barstow Resource Area

ILLUSTRATION 6

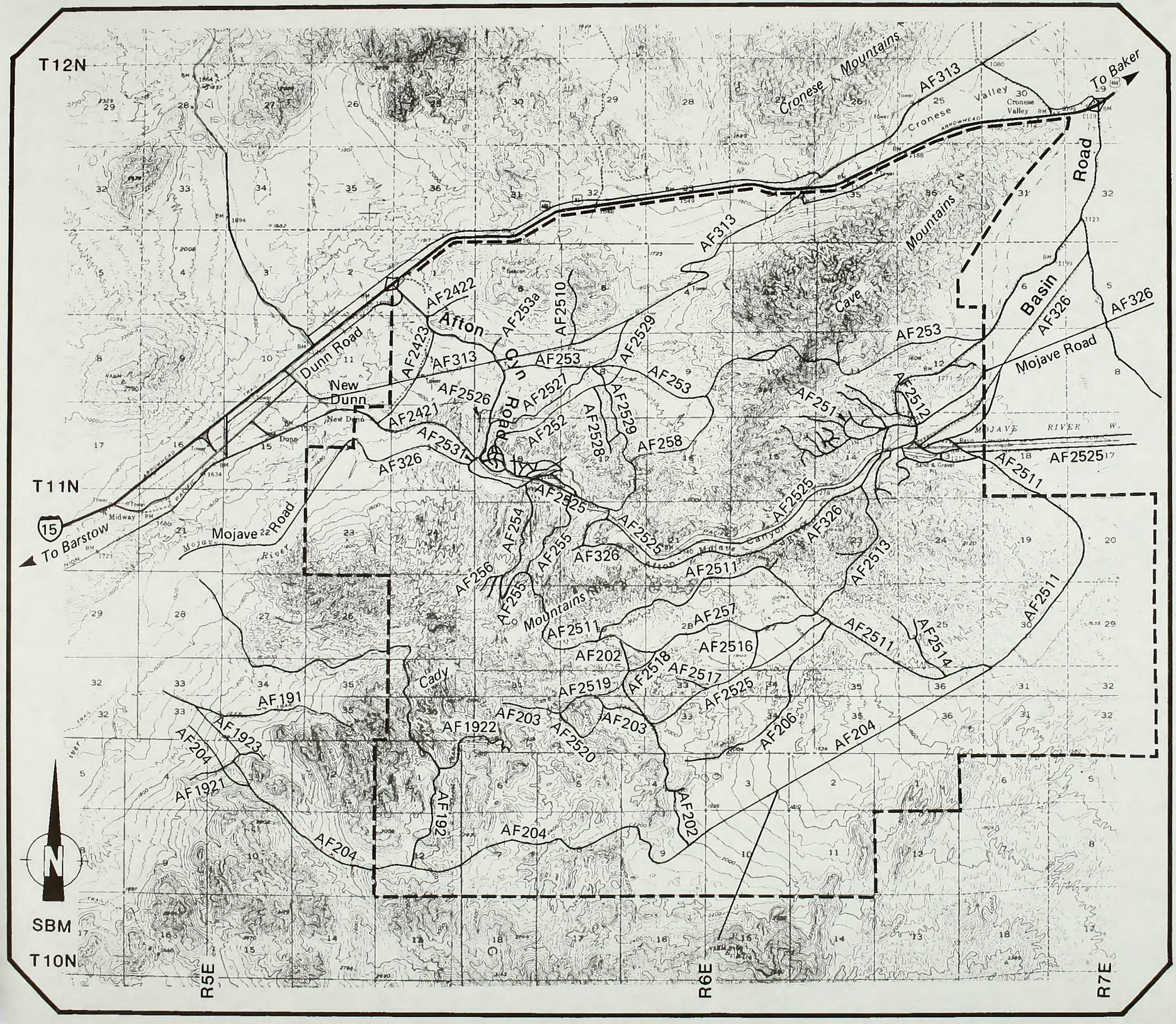
AFTON CANYON PLANNING AREA

MANAGEMENT PLAN

EXISTING VEHICLE ROUTES (1988)

Planning Area Boundary

Existing Route



Bureau of Land Management
California Desert District
Barstow Resource Area

Closing these routes is consistent with multiple use management. The area continues to be managed for a myriad of resources including recreation, range, watershed, minerals, wildlife, scenic, scientific, and historic values; and, therefore, fully meets the definition of both multiple use and sustained yield.

6. Provide for passage of motorized vehicles along the historic Mojave Road by rerouting a portion out of the riparian area and designating the Mojave Road through Afton Canyon as open for use by all vehicles on a single, signed route only. (Goals A and D)

Discussion

Currently, traffic along the Mojave Road moves through the riparian zone. This results in unacceptable destruction of vegetation, stream channels, and soil structure. Destruction of vegetation and soil structure allows increased soil loss in the fragile riparian zone during periods of increased water flow through accelerated erosion. Uncontrolled traffic also interferes with bighorn sheep access to water, with nesting raptors, migratory birds, unique amphibians, and fishes.

Mojave Road traffic will be limited to a single, marked route. (Illustration 5). Between one-half mile below the middle trestle and one mile above the west trestle, AF326 will be designated as closed and Mojave Road traffic will be rerouted onto the railroad access road (AF2525),then on Afton Canyon Road past the campground area, and finally under the railroad at the corrals west of the campground (AF2531) and back onto the existing Mojave Road route (AF326). This reroute affects two and one-half miles of the Mojave Road. Provisions will be made for parking near the middle trestle to allow foot access to the caves and other canyon resources.

7. Rehabilitate all routes not signed as open for use by motorized vehicles so that they will meet at least VRM Class II standards. (Goal C)

Discussion

Establishing closed routes without rehabilitation to render them either unusable or unnoticeable creates the impression that the routes may be used and results in continued use. Rehabilitation will include such things as barriers, berming, fencing, hand raking, rock placement, signing, painting, and scarification. In some cases, revegetation will be needed.

The area known as "competition hill" and the associated dry camp across Afton Canyon Road have the highest priority for rehabilitation. The Afton Canyon Campground area should be rehabilitated next, followed by the riparian zone between the

campground and the east end of the horseshoe bend in the river, and then the riparian zone west of the upper trestle. Closed routes in the remainder of the planning area will follow.

8. Maintain the existing campground at its present size as a fee use overnight camping area. Designate a portion of the "dry camp" area on the bench west of the present campground as a fee use group camping area as a part of the Afton Canyon Campground. Establish an equestrian campground at the northern access to the Afton Canyon area adjacent to I-15 and Afton Road. Allow camping within the planning area in designated camping areas only (Illustration 7). (Goals C and D)

Discussion

The Afton Canyon Campground was developed to allow low-impact visitor use of the unique resources of the area. With the other actions of this plan in force, campground use will not impact these resources.

Camping by groups interested in a social experience will be allowed in the group camping area. This group camping area will become part of the Afton Canyon Campground administratively and fees will be charged for its use.

Equestrian camping in the Afton campground creates conflicts with other users in terms of flies, odor, and manure. In addition, the Afton campground is not available for reservation by groups or individuals. The equestrian camp will by developed and managed through a Cooperative Management Agreement (CMA) with an appropriate equestrian group. This camp will be available to groups by permit.

Uncontrolled camping within the planning area degrades fragile riparian habitat, disturbs bighorn sheep and other wildlife, and leads to route proliferation. Therefore, camping will be allowed only in the three designated camping areas. This action amends the CDCA Plan's tolerance for camping within 300 feet of an open or limited route.

9. Expand the existing prohibition on recreational shooting (target shooting, plinking, and trap shooting) within the ACEC and campground to include the expanded ACEC and dry camp. Legal hunting will be allowed in the expanded ACEC with shotguns only using non-solid projectiles. (Goal D)

Discussion

Under current management, recreational shooting is not allowed in the Afton Canyon ACEC and Afton Canyon Campground [T. 11N., R. 5.E, Secs. 14, 24, (SBM); T. 11N., R. 6E. Secs. 14, 15, 18, 20, 28 (SBM)]. This restriction was established by Federal Register

ILLUSTRATION 7

AFTON CANYON PLANNING AREA

MANAGEMENT PLAN

FACILITIES

- Planning Area Boundary
- Range Fence
- Vehicle Barrier
- Area Information Sign
- Kiosk
- Campground
- Equestrian Campground

Bureau of Land Management
California Desert District
Barstow Resource Area

T12N
T11N
T10N
SBM
R5E
R6E
R7E
To Baker
To Barstow
15
Cronese Mountains
Cronese Valley
Mountains
Basin
Road
Afton Cyn Road
New Dunn
Dunn
Midway
Mojave River
Mojave River
Afton Canyon
Mountains
Cady
Sand & Gravel Pit
MOJAVE RIVER
PACIFIC
UNION
N

Notice/Vol. 51, No. 20/Thursday, January 30, 1986. This prohibition will be extended to include the expanded ACEC (Illustration 3) and all other developed recreation facilities by a new Federal Register Notice. Legal hunting will be allowed in the expanded ACEC with shotguns only (using shot shells, not rifled slugs) and both target shooting and legal hunting will be allowed in the remainder of the planning area.

10. Increase on-the-ground management (including law enforcement, educational and visitor services activities) in the planning area. (Goals A, B, C, D and E)

Discussion

The campground in Afton Canyon is patrolled twice each week, on the average, and Afton Canyon itself is patrolled once each week. The southern planning area is not regularly patrolled.

Successful implementation of this management plan will require intense on-the-ground management. BLM is committed to a full-time presence in Afton Canyon during peak periods of visitor use (weekends and holidays).

In addition to an increased law enforcement presence, increased educational and visitor services contacts will be essential to inform the public of management changes in Afton Canyon, to explain recreational opportunities available in the Afton Canyon area, and to direct the public to other areas for recreation uses that are inappropriate to the Afton Canyon area.

11. Rehabilitate the riparian zone to increase water flow by removing all tamarisk (Illustration 8). (Goals A and B)

Discussion

Tamarisk removal is one of the key tasks for increasing stream flow through Afton Canyon. Published estimates based on eradication efforts at Camp Cady, 10 miles west of Afton Canyon on the Mojave River (Neill 1988), and other places (Kerpez and Smith 1987:2) suggest an increase of approximately 9 acre feet per year per acre cleared to bare ground. This bare ground increase estimate will be diminished by about 4 acre feet per year devoted to native vegetation. Thus there could be a net water flow increase of approximately 5 acre feet per year per acre of tamarisk cleared.

ILLUSTRATION 8

AFTON CANYON PLANNING AREA

MANAGEMENT PLAN

RIPARIAN ZONE

Planning Area Boundary

Riparian Area

T12N

T11N

T10N

SBM

R5E

R6E

R7E

To Barstow

To Baker

Cronese Mountains

Cronese Valley

Cronese Basin Road

Afton Cyn Road

New Dunn

Dunn

Midway

Mojave River

Cave Mountains

Mojave River Wash

Sand & Gravel

Cady Mountains

Cady

N

Bureau of Land Management
California Desert District
Barstow Resource Area

With the estimated acreage to be cleared (580 acres), successful eradication and revegetation could substantially increase the average annual surface flow through Afton Canyon. Without eradication it will be impossible to maintain current flow because each new acre covered by tamarisk removes approximately 9 acre feet per year from current flow.

Tamarisk in Afton Canyon will be eradicated utilizing several treatment methods. Using a cut-stump herbicide treatment (Neill 1988), trees will be cut within two inches of the ground and the stumps will be immediately sprayed with an environmentally safe herbicide, such as Garlon 4. Slash is stacked and burned on site. In similar habitats, this method has proven to be 95% effective (Neill 1988). Herbicides would not be used for tamarisk eradication until resolution of the California Vegetative Management EIS appeal.

A second proven method is to use a root plow. This device, pulled behind a bulldozer, is designed to sever the tamarisk roots below the root crown (12 to 18 inches below the surface). Severed plant debris would then be piled and burned to prevent any resprouting or re-rooting from plants left in place, in contact with the soil. This method has been very effective along the Colorado River, although herbicides are used as a follow-up procedure to knock down the limited resprouting which occurs. Pilot studies of tamarisk removal using heavy equipment will be initiated to determine which methods are most effective with least disturbance to surrounding native vegetation, soil, and water.

A third method is to use a bushhog on appropriate sized plants (under about 2 1/2 inches in diameter), cutting the tamarisk into mulch and immediately spraying the stumps with herbicide. This method has the advantage of leaving a protective mulch on the ground and would be more cost effective than manual removal in areas that would allow use of this piece of equipment.

The expected sequence of tamarisk removal by area would be as follows:

1) The campground area using hand labor (cutting and spraying). This effort should function independently of other removal in the canyon.

2) The west end of the riparian zone using heavy equipment. This area has some of the heaviest densities of tamarisk and is upstream of the rest of the canyon. Attacking this area first would reduce the amount of reinfestation by seed.

3) The horseshoe area using heavy equipment. After beginning at the upstream end of the canyon, it is logical to proceed sequentially downstream.

4) The east end of the riparian zone.

Prior to tamarisk removal, a project specific EA will be completed. All areas require annual maintenance until the tamarisk is completely eradicated. Studies show that this can be done by a small crew in a short time, if it is done regularly. Where possible, volunteers will be used for eradication and maintenance.

The large evergreen tamarisk (athel) located at the old Afton siding will not be removed. These trees are not a seed source and offer a shaded area to visitors.

12. Rehabilitate the riparian zone by planting areas cleared of tamarisk with native plants. (Goals A and B)

Discussion

Tamarisk is not usable wildlife habitat and its proliferation has significantly diminished available habitat. Replacing tamarisk with native plants will increase usable wildlife habitat.

It is difficult to define the exact composition of the riparian zone for revegetation. Bottom lands should be dominated by sedges, reeds, and saltgrass. Cottonwood trees, willows, and mesquite should dominate the edges of the riparian zone and a mixed saltgrass and saltbrush association should be found between the trees and the river bottom. The proportions of plants introduced will follow the proportions of appropriate landforms along Afton Canyon. Plant stock is available at Camp Cady for use in the revegetation effort.

Where possible, volunteers will be used in the revegetation effort.

13. Eliminate, through fencing, cattle grazing from all areas outside of the existing allotment. (Goals A, B, and C)

Discussion

The existing Cady Mountain allotment lies to the south of Afton Canyon. Cattle have been moving from this allotment, as well as from the Cronese Lake allotment to the north of Interstate 15, into Afton Canyon. Livestock grazing occurring outside of these allotments will be eliminated.

This will require a gap fence crossing the river/canyon bottom west of the west trestle and gap fencing al ng I-15 (see Illustration 7). It may also be necessary to gap fence portions of the south rim of the canyon to eliminate cattle movement into the canyon from that portion of the allotment.

14. Develop and install informational signs to inform visitors of the opportunities and restrictions in using the planning area. Post signs detailing the limitations on vehicle access. Install a visitor entrance station (kiosk) at Interstate 15 and Afton Canyon Road. Brochures will be developed for the Afton Canyon area detailing low-impact recreational opportunities and other resource-related topics. (Goals D and E)

Discussion

Information signs will consist of four large (4'X6') signs detailing recreational opportunities and regulations pertaining to use restrictions in the planning area. An additional information/interpretive sign will be installed at the entrance to the Afton Campground. These signs will be silkscreened on high-density plywood. Standard BLM signs identifying open routes will be posted at intersections and at line of sight distances along open routes.

The visitor entrance station (kiosk) will be used to inform the public of the allowed uses in the area and where uses, inappropriate in the Afton Canyon area, can be pursued, e.g. off-highway vehicles should be used east of Afton in the Rasor OHV Area.

15. Continue the volunteer campground host program at the Afton Campground. (Goal D and E)

Discussion

The campground host program is a valuable and cost effective way to reduce campground vandalism, offer extensive visitor assistance, and educate the public to reduce resource conflicts. While a year-round campground host is desirable in Afton Canyon, the primary need is for coverage during fall, winter, and spring when visitation is highest.

16. Review all BLM and non-BLM actions which may affect the quantity and quality of available water flowing through Afton Canyon. As needed, deny, protest, or appeal any action that will or may adversely impact this resource. (Goals A and B)

Discussion

Maintaining the quality and quantity of the water flowing through Afton Canyon is essential to preserve its unique resources. As the Mojave River Valley develops upstream from Afton Canyon, there will be increasing groundwater demands. Eventually, the flow in Afton Canyon may diminish due to upstream pumping. An active program, now and in the future, will establish the public's interest in the current Afton Canyon flow. If the Mojave River becomes subject to allocation, the public's water needs will be on

record and considered in the allocation process. This will help preserve the necessary surface flow in the future. Examination of annual water flow records over the past 38 years indicates no trend toward a reduction of average surface flow due to upstream uses.

17. Prohibit motor vehicle events involving the elements of competition within the planning area. (Goals A, B, and C)

Discussion

Competitive vehicle events are incompatible with the unique resources of the planning area. Non-competitive large group events and commercial activities requiring a permit may be allowed on an individual basis, following environmental analysis of each application.

18. Prohibit wood collection within the expanded ACEC. (Goals A and B)

Discussion

Vegetation in the expanded ACEC is limited and needs to be protected to maintain wildlife habitat, native riparian plants, and scenic values. Dead and down vegetation serves as habitat for wildlife and provides soil nutrients; it needs to be left in place.

19. Remove all burros (estimated at 6 animals) from the planning area in order to rehabilitate the riparian zone and improve wildlife habitat. (Goals A and B)

Discussion

The planning area was not designated as a wild burro management area in the Desert Plan. During preparation of the Desert Plan, the Afton Canyon area contained no burros. Burros in the area are thought to be released adopted animals. Burros compete with native wildlife, graze on sensitive vegetation, create visual scars, and impact water quality. Their presence in the planning area is incompatible with the goals of this plan. Burros will be removed by gathering them for the adoption program.

20. Implement the following fire management prescriptions in the expanded ACEC. (Goals A, B, and C)

1. Mechanized equipment will not be used in the expanded ACEC. Specific authorization may be given by the Barstow Area Manager under extenuating circumstances.

2. Initiate aggressive initial attack as soon as possible, within the constraints imposed above, to limit vegetative destruction in the expanded ACEC.

Discussion

Since the thrust of this plan is rehabilitation of riparian and scenic values through the restriction of vehicle use in the expanded ACEC, the unrestricted use of mechanized equipment in fire suppression could cause more harm than good. An aggressive initial attack will limit vegetative destruction, as well as assist in protecting private developments.

V. MONITORING

Monitoring the implementation of the management plan for the Afton Canyon Natural Area and surroundings is essential to ensure that the plan's goals are achieved. Monitoring measures:

1. The extent to which management actions have been implemented;
2. The extent to which implemented actions are achieving management goals; and
3. The extent to which further plan adjustments are needed.

A. Riparian Zone

The riparian zone will be monitored to document changes in the quality and quantity of riparian vegetation. It will focus on tamarisk eradication efforts, associated native plant revegetation efforts, and the establishment of a clearly defined stream course.

Specific data to be collected includes plant community composition and the extent of native plant revegetation. This will be done be using 1:2400 color infra-red aerial photography (using Kodak Aerochrome "2443" film). All aerial photography will be conducted between April 1 and May 15 and between 11:00am and 3:00pm PDT. Cloud cover should be 0% and photo endlap will be 60% in order to allow stereo viewing. Flight lines will be the same as those contained in the 1989 contract for aerial photography in Afton Canyon. Prior to photographic flights, clearly visible ground markers will be placed at measured distances to accurately compute scale and delineate flight lines. The initial flights occurred in the spring of 1989.

Individual species will be ground-truthed against the photographs. Communities and individual plants in the photographs will be correlated with communities and plants on the ground to determine species composition at the site. Site specific composition data will be interpolated to the entire riparian zone. Establishment of a clearly defined stream course will also be monitored through the use of the color infra-red aerial photography.

Monitoring flights will be repeated at three year intervals or as needed depending on the amount of riparian manipulation achieved (two hundred acres per year would indicate a two year interval).

Documentation of change depends on two sets of photographs. The data will be examined to detect changes in the extent of the riparian vegetation, species diversity, and tamarisk. As native vegetation is re-established, composition data will be compared to the desired composition.

A "Timed Meander" procedure will be used annually to detect the occurrence of non-native plant species (such as camelthorn, Alhagi camelorum) in order to target their eradication. These transects would be for two hours periods at three week intervals during the spring and early summer in order to detect species flowering at different times. It is anticipated that these will be more effective at detecting invasions than permanent transects.

Should riparian monitoring indicate that the eradication of tamarisk and the establishment of native vegetation is not working, the methods used will be reviewed and altered as needed. This may include changing the type or amount of herbicide or the type of mechanical treatment. Revegetation techniques may be altered to include planting to various depths, amount and types of fertilizer, supplemental watering, and control of competing species (plant and animal).

Invasions of non-native plants will be aggressively attacked using herbicides or grubbing (digging out with hand tools).

B. Wildlife

The condition and trend of the Cady Mountain bighorn sheep herd has been and will continue to be monitored by the California Department of Fish and Game (DFG). Annual aerial counts are taken to monitor herd numbers, and some of the animals have been fitted with radio collars to track their movement.

The riparian monitoring detailed above will also be used to document changes in the quality of wildlife habitat. As acreage of tamarisk decreases and acreage of native vegetation increases, wildlife habitat quality increases.

A winter survey of bird populations and species diversity will be conducted each year.

C. Recreation

Recreation will be monitored through visitor use surveys and observations of the type and extent of recreation use. The visitor use survey will focus on measuring the transition to low-impact recreation use.

Motorcycle and ATV use will be closely monitored through patrolling, focusing on proliferation off of designated open routes. If free-play use continues to be documented in the Afton Canyon area, a closure of the area to use by motorcycles and ATVs will be initiated.

If monitoring determines that the transition to low-impact recreational uses is not occurring, additional interpretation and education efforts will be initiated. These might include increased visitor contacts and improved brochures and signs.

D. Use Restrictions

A primary intent of this plan is to direct vehicular traffic away from sensitive resources. New regulations will restrict target shooting (and plinking), camping, wood collecting, and competitive motor vehicle events. These restrictions will be monitored by regular patrols to determine the extent to which route designations, informational signs, and facilities are effective in implementing select management actions. Patrols by rangers and visitor services personnel should focus on route proliferation, violations of route closures, and these other specified restrictions.

Grazing activity will be monitored through patrols. If continued unauthorized cattle grazing outside the allotment boundary in the planning area is documented, then administrative measures will be initiated to control trespass until additional fences can be installed.

Once fences are installed, livestock trespass will be addressed in the manner prescribed by the Code of Federal Regulations. The normal sequence is to notify the livestock lessee, to issue a trespass notice, and finally to impound livestock where the owner has failed to take satisfactory action to resolve the situation.

If monitoring shows that the management actions and their implementation are not having the desired effects, additional measures will be undertaken. These measures might include the construction of additional barriers, fences, and signs, and increased patrols.

E. Water

Maintaining water quantity and quality is essential to the management of Afton Canyon. Water flow through the canyon is currently being measured

at a monitoring station in the Canyon under the west trestle. These data will be analyzed on a monthly basis to track flow trends.

Water quality will be monitored by collecting samples in the spring and fall at the following locations: opposite the corral, 100 yards upstream of the middle trestle, 100 yards upstream of the eastern barrier. Analysis will be for siltation, chemical impurities, and bacterial content.

These data will be used to determine the effects on water quality and quantity of BLM and non-BLM actions within Afton Canyon. Decreased flows or significant changes in water quality may require more adamant protests to upstream groundwater pumping or use.

F. Reporting

At the end of each fiscal year, the status of each management action will be documented. At a minimum the documentation will include: a list of the management actions implemented, a list of the management actions partially implemented, a list of the management actions not implemented, an analysis of the monitoring results showing the effectiveness of the management plan including problems, and recommendations for revising the management plan.

To meet the deadline for the annual report, which corresponds with the preliminary annual work plan schedule, monitoring data for the preceding 12 months must be put into a final report by August of each year.

VI. IMPLEMENTATION

A. Responsibility

A specific Barstow Resource Area employee will be assigned responsibility for coordinating the implementation of this plan. Monitoring and the annual monitoring report, identifying specific actions to be accomplished by others, and determining adjustments in methodology will be assigned to pertinent staff. These assignments will be made annually, supported by the AWP, submitted to the appropriate supervisor, and become line items on the responsible individual's Performance Improvement and Position Review (PIPR).

B. Schedule and Cost

The implementation schedule for this plan will be as follows:

1. a Federal Register Notice will be published, containing route designations and special rules for the area (target: July 15, 1989);

2. for a two month period following publication, an extensive public education program will be undertaken to inform visitors of changes in management of the Afton Canyon area (target: July 1-September 1, 1989);

3. signs, barriers, and fences will be erected and tamarisk eradication efforts will be initiated in the test plots at the west end of the riparian zone (target: September 1, 1989).

At the end of the public education period (about September 1, 1989), a concentrated effort of increased patrol will be initiated to ensure public compliance with the management of the Afton Canyon area.

A total of $145,000 has been received for implementation of this plan in fiscal year 1989. In order to complete 100% of the implementation, additional funding will be required. An application for "California Environmental License Plate" (CELP) funding for tamarisk removal has been submitted. Appropriated funds will be used for personnel and some projects. Volunteers and contributions will be solicited for other projects, such as native plant maintenance.

Under the above funding scenario, sufficient funds exist to finance virtually all of the planned management actions with the possible exception of complete tamarisk removal and native plant revegetation. An itemized list of funding and work month requirements is provided in Illustrations 9 and 10.

One new employee will be hired (a visitor service specialist) who will be responsible for installing signs, making visitor contacts, maintaining facilities, supervising the campground host, and monitoring recreation.

ILLUSTRATION 9 IMPLEMENTATION TABLE

TASK	PHASE 1 WM	PHASE 1 PROC.	PHASE 2 WM	PHASE 2 PROC.	PHASE 3 WM	PHASE 3 PROC.	PHASE 4 WM	PHASE 4 PROC.	PHASE 5 WM	PHASE 5 PROC.	TOTALS WM	TOTALS PROC.
1. Amend Desert Plan			1.00								1.00	$0
2. Consolidate Lands	4.00	$1,200	2.00		4.00	$1,200	2.00		4.00	$1,200	16.00	$3,600
3. Withdrawal			2.00		2.00		2.00	$1,500			6.00	$1,500
4. Designate Routes	0.25										0.25	$0
5. Mojave Road Reroute	2.00	$20,000									2.00	$20,000
6. Rehabilitate Damaged Routes	3.00	$15,000	3.00	$15,000							6.00	$30,000
Barriers & Obliteration	2.00	$10,000	2.00	$15,000							4.00	$25,000
7. New & Expanded Campgrounds			1.00	$5,000	1.00	$5,000					2.00	$10,000
8. Shooting Restrictions	0.25	$500									0.25	$500
9. Ranger Patrols	6.00	$4,000	6.00	$4,000	6.00	$4,000	6.00	$4,000	6.00	$4,000	30.00	$20,000
10. Tamarisk Removal	3.00	$50,000	3.00	$100,000	3.00	$100,000	3.00	$100,000	3.00	$100,000	15.00	$450,000
11. Riparian Revegetation			2.00	$5,000	2.00	$5,000	2.00	$5,000	2.00	$5,000	8.00	$20,000
12. Livestock Fencing	2.00	$30,000	2.00	$20,000							4.00	$50,000
13. Signs	0.50	$1,500	0.50	$1,500	0.50	$1,500					1.50	$4,500
14. Campground Host	1.00	$2,300	0.25	$800	0.25	$800	0.25	$800	0.25	$800	2.00	$5,500
15. Review All "Water" Actions	0.25		0.25		0.25		0.25		0.25		1.25	$0
16. Prohibit Motor Vehicle Events	0.25		0.25		0.25		0.25		0.25		1.25	$0
17. Remove Burros			1.00	$1,000	1.00	$1,000					2.00	$2,000
18. Riparian Monitoring	1.00	$5,000	1.00		1.00		1.00	$5,000	1.00		5.00	$10,000
19. Recreation Monitoring	3.00	$1,000	3.00	$1,000	3.00	$1,000	3.00	$1,000	3.00	$1,000	15.00	$5,000
20. Other Monitoring	1.00	$1,000	1.00	$1,000	1.00	$1,000	1.00	$1,000	1.00	$1,000	5.00	$5,000
TOTAL	29.50	$141,500	31.25	$169,300	25.25	$120,500	20.75	$118,300	20.75	$113,000	127.50	$662,600

WM = Work Months PROC. = Procurement

APPENDIX A: CONTRIBUTORS

Contributor	Affiliation/Interest
Daryl Albiston	Chief, Resource Operations Staff Bureau of Land Management
Pam Barber	Equestrian Use
Pat Barker	Archaeologist Bureau of Land Management
Scott & Claudia Blair	Cattle Ranching *
Vern Bliech	California Department of Fish & Game *
H. Marie Brashear	Rockhounding
Mike DeKeyrel	Realty Specialist Bureau of Land Management
Mike Fascinato	Cal-4W-D *
Ernie Griego	Equestrian Trails, Inc. *
Dean Huibregtse	Range Conservationist Bureau of Land Management
Harold Johnson	Outdoor Recreation Planner Bureau of Land Management
Al Kram	Rockhounding
Dave Mensing	Recreation Bureau of Land Management
Paul B. McClain	Wildlife Biologist Bureau of Land Management
Bill Neill	Sierra Club *
Beth Pinnell	Mojave Desert Gem and Mineral Society *
John W. Rains	CalMat

Robert E. Reynolds	San Bernardino County Museum *
John Russell	Mojave Water Agency *
Ken Schulte	Geologist Bureau of Land Management
Jim Strain	Rockhounding
Mil Thornton	CORVA-CATV *
Robert L. Vernoy	California Department of Fish & Game *
Hildamae Voght	Rockhounding

* member of the Management Advisory Committee (1985).

APPENDIX B: RESOURCE SUMMARY

Water Resources

The Mojave Desert is characterized by internal drainage. From its headwater tributaries, Deep Creek and West Fork, the Mojave River drops steeply within 10 miles from 5,114 feet at Lake Arrowhead to about 3,000 feet at Mojave Forks. From Mojave Forks the river curves northeast across the Mojave Desert for about 100 miles along a very gentle gradient and eventually empties into Soda Lake Playa at 922 feet.

Most of the time, there is very little surface water in the Mojave River except in the headwater region. The headwater tributaries account for about 90% of the total flow within the Mojave River. Below Mojave Forks there are only three areas of permanent surface water flow: a 7 mile stretch near Victorville, a 3 mile stretch about 20 miles east of Barstow at Cady Ranch, and a 4 to 6 mile portion in Afton Canyon. Except at these sites, which are located on impervious surface bedrock, water flow along most of the lower river is subsurface beneath deep sands and gravels.

During occasional heavy storms, rapid run-off produces drastic changes in downstream conditions and the distribution of organisms along the river. Given these storms, river flow is highly variable. Over the last 20 years, the maximum recorded flow was 72,870 acre feet in 1969, and the minimum was 130 acre feet in 1975. Controlling for major flood years, the ten year average surface flow through Afton Canyon is less than 1,000 acre feet per year.

The water flowing through Afton Canyon is highly susceptible to contamination due to the path of its flow. It passes through or near the communities of Hesperia, Victorville, Apple Valley, Silver Lakes, Barstow, and Yermo; all of which pose potential contamination sources. Several of these communities draw their domestic water directly from the drainage.

Within the past 10 years, two dams have been constructed near the headwaters of the Mojave River. The Cedar Springs Dam, across Miller and Cleghorn Canyons, impounded 78,000 acre feet of water. The majority of this water is imported water transported by the State Water Project. Natural storage at the end of August 1988 was 158 acre feet. The Mojave River Forks Dam, at the mouth of Deep Creek, is a check dam that does not normally impound the river.

After severe flooding in 1967, the Union Pacific Railroad built a diversion levee at Basin Siding to channel floodwater into East Cronese Lake and preventing overflow into Soda Lake and flooding at Baker.

Vegetation

The Afton Canyon area is characterized by three vegetation assemblages; Creosote Bush Scrub, Big Galleta Scrub Steppe, and Riparian. Creosote Bush Scrub is the most prevalent, covering approximately 90% of the area. The dominant species of this assemblage are creosote bush (Larrea tridentata), and burrobush (Ambrosia dumosa) with localized dominance shared with krameria (Krameria parvifolia), cheese bush (Hymenoclea salsola), brittlebush (Encelia spp.) and ephedra (Ephedra nevadensis, E. californica) depending on local conditions. This assemblage is extensively dissected by washes, badlands and rock outcrops and thus not uniform throughout the planning area.

Big Galleta Scrub Steppe covers about 2,000 acres in the north central portion of the planning area. It is dominated by big galleta grass (Hilaria ridiga) and Indian rice grass (Oryzopsis hymenoides). Associated species include creosote bush and ephedra.

Riparian assemblages within the planning area are restricted to the Mojave River channel in Afton Canyon. Species dominance in these areas varies considerably throughout the canyon, but usually involves one of the following: catclaw (Acacia greggii), saltbush (Atriplix spp.), desert willow (Chilopsis linearis), saltgrass (Distichlis spicata), Fremont's cottonwood (Populus fremontii), Mesquite (Prosopsis glandulosa var. torreyanna and P. pubescens), black willow (Salix nigra var. goodingii), athel (Tamarix aphylla) and Salt-cedar (Tamarix parvifolia and T. ramosissma). Salt-cedar are noxious introduced species that displace native vegetation and make the habitat unsuitable for wildlife.

Tamarisk has invaded the riparian area to the extent that it is estimated that over 70% of the native vegetation has been displaced. Eradication of tamarisk is difficult and commonly expensive, but the benefits to wildlife by replacing lost habitat are substantial.

The native riparian assemblage in Afton Canyon is recognized as an Unusual Plant Assemblage (UPA) in the California Desert Plan (1980) because of its rarity in the desert and high importance to wildlife.

There are no known state or federally listed or proposed, rare, endangered or threatened plant species or their designated habitat within the planning area. No California Native Plant Society, BLM candidate or U.S. Fish & Wildlife Service review species have been reported in the planning area.

Wildlife

Afton Canyon is environmentally sensitive because it contains one of the few true riparian areas in the Southern California desert. The existing ponds, marshes and streams, with a diversity in riparian plants, provide habitat for a wide variety of wildlife. Enhancement of the diverse vegetative and riparian plant associations in the Afton Canyon planning

area is vitally necessary to insure the long-term viability of the unique ecosystem and its high wildlife habitat values.

The Afton Canyon planning area encompasses a large, topographically diverse portion of the central Mojave Desert. Wildlife diversity is very high in this region for several reasons. Eolian sand deposits and crumbling rock hills allow for the co-existence of many wildlife species with specific habitat requirements. Riparian vegetation and standing water along the Mojave River drainage provide habitat for aquatic forms and refuge for a great variety of birds. Lastly, widespread plant associations dominated by creosote and burrobush provides habitat for many species.

Contract studies for the California Desert Plan recorded 180 bird species in Afton Canyon. Riparian habitats in the California Desert, such as Afton Canyon, have been shown to have much greater species diversity than associated, more xeric, habitats (England, Foreman, and Laudenslayer 1981).

Birds of special management concern recorded in Afton Canyon include the Vermilion Flycatcher, Summer Tanager, Yellow Warbler, and Yellow-breasted Chat. Two raptors, the Golden Eagle and the Prairie Falcon, nest in the south-central portion of the Cady Mountains. The high sensitivity of nesting raptors to disturbance has been documented (Fyfe and Olendorff, no date; Harmata, Durr and Geduldig 1978). The extensive riparian habitats and surrounding steep and inaccessible cliffs provide excellent feeding and nesting opportunities for the American Kestrel, Sharp-skinned Hawks, Cooper's Hawks and Barn Owls.

Quantitative data are not available for mammals, reptiles, or amphibians other than by confirmation of the presence of individual species. Abundance and diversity of these animals is significantly higher than in surrounding desert habitats due to the increased availability of food, water and cover in the riparian zone. This abundance and diversity is being substantially reduced by the displacement of native vegetation by tamarisk. Tamarisk does not provide suitable habitat or forage for wildlife indigenous to the area and precludes the establishment of valuable native plants.

A survey of fish and reptiles in the lower Mojave River system was undertaken for the California Desert Plan. Generalized desert reptiles occurring in the planning area include the western whiptail, zebra-tailed lizard, gopher snake and coachwhip. Species with more specialized requirements known to occur within the area include the sidewinder, chuckwalla, and Mojave fringe-toed lizard. The easternmost population of the western pond turtle persists in isolated portions of the Mojave River drainage. It has been recorded in Afton Canyon and at Camp Cady.

The desert tortoise, a state-protected species currently under federal status review, is present throughout the planning area in densities of 0 to 20 per square mile, based on transect estimates undertaken during the California Desert planning process.

Fish recorded in Afton Canyon during field surveys by the California Department of Fish and Game include the black bullhead, flathead minnow and Arroyo chub. The federally endangered Mohave Tui Chub has been displaced from its native Mojave river habitat by the Arroyo Chub.

Mammals recorded in the planning area include the little pocket mouse, Merriam kangaroo rat, cactus mouse, canyon mouse, desert woodrat, antelope ground squirrel, black-tailed jackrabbit, desert cottontail, badger, kit fox, bobcat, and desert bighorn sheep.

The Cady Mountains contain a herd of approximately 25 desert bighorn sheep. While Bighorn sheep range over at least 100 square miles in the Cady Mountains, permanent range is confined to approximately 50 square miles in the south-central portion of the mountains. This permanent range is important as a lambing grounds. The lambing season for this herd is assumed to be from February to June. Bighorn sheep rely on three water sources within this range: the Mojave River in Afton Canyon, and two big game guzzlers in the southern and northern portions of the Cady Mountains.

Conflicting uses that could affect this herd include competition from burros and livestock and disturbance from recreation and mining.

The sensitivity of the Cady Mountains bighorn sheep herd was recognized in the CDCA Plan (1980), which provides for implementing a habitat management plan specifically for the area. Management actions recommended by the CDCA Plan include controlling vehicle use, increasing area surveillance, protecting water sources, and protecting and enhancing of wildlife values.

Some human activities within the Afton Canyon area are negatively affecting wildlife species. Off-highway vehicle use disturbs mobile wildlife, such as bighorn sheep and birds, causing them to leave the area or change their activity patterns. OHVs cause significant habitat damage. OHVs destroy riparian vegetation, prevent the establishment of well-defined riverbanks, and often destroy ground-nesting attempts by resident waterfowl and shorebirds. Shooting has a minor effect. It may be responsible for the temporary displacement of some wildlife. Cattle grazing in the riparian zone has much the same effect as OHV use.

Visual

The planning area can be divided into three Visual Resource Management (VRM) classes. Afton Canyon, east of Afton Campground, and the Cave Mountain area, are VRM class II areas. This means that change in any basic visual element (form, line, color, and texture) caused by human

activity should not be evident in the characteristic landscape. Contrasts caused by human activity can be seen, but must not attract attention.

The planning area south of Afton Canyon is VRM class III. This means that contrasts in basic elements caused by human activity can be evident, but should remain subordinate to the existing landscape.

Finally, the planning area west and north of the Afton Canyon Campground is class IV. This means that contrasts in basic elements cause by human activity attract attention and are a dominant feature of the landscape in terms of scale. These contrasts may repeat the basic elements of the natural landscape.

Soil

Most of the planning area, excluding the canyon bottom, is classified as a Rockland Association with stony or rocky, sand or sandy loams derived from bedrock. Fertility is low in this association. The canyon bottom contains a Riverwash Association, composed of sands and gravelly sand. Fertility in this association is extremely low. Soil structure in riparian areas is very fragile and use of vehicles in this area breaks down this structure causing soil loss and damage, which further reduce fertility.

Geology

The planning area is in the Mojave Desert physiographic province. The basement rock complex, consisting of Mesozoic and pre-Mesozoic Age metamorphic and igneous rocks, is overlain by Cenozoic Age volcanic and sedimentary deposits. During and since the Mesozoic Era, the region has undergone uplift and erosion which has exposed large areas of intrusive and metamorphic rocks. During the period of uplift and erosion, igneous activity continued with the intrusion of numerous dikes. Volcanism became particularly active during the Miocene Epoch with extrusive and, in part, explosive phases. Erosion of the pre-Tertiary rocks continued during the Miocene Epoch. Drainage was partly into internal basins with deposition of non-marine sediments. Faulting and folding were active during Tertiary time and have continued up to the present.

In late Pleistocene times, a large area encompassing Coyote Lake, Troy Lake and the Mojave River eastward to Afton Canyon was covered by Manix Lake. The Manix Lake deposits are composed of green, silty clay deposited in the lake, and sand and gravel deposited as beach bars along the windward (east) shores of the lake. Two gravel bars composed of sandy gravel with cobbles occur in the area. An excellent example of two wave-cut benches occurs in the area. Manix Lake was drained perhaps 19,000 years ago, probably by the erosion of its outlet near the Manix fault. Subsequent downcutting and erosion by the Mojave River has provided excellent exposures through the lake and pre-lake sediments as well as the fanglomerate in Afton Canyon.

The most important structural feature of the area is the Manix fault. The fault is a zone of parallel to subparallel faults trending northeast, across Afton Canyon. The Manix fault has had relatively continuous activity during Tertiary time and up through the Pleistocene and Recent time.

Mining

One active mining operation exists within the planning area. It is CalMat's Baxter property which has operated as an iron mine since the 1930's. The mine is located on the extreme eastern edge of the planning area in T. 11N., R. 6E., Sections 12 and 13. The property includes 450 acres of patented mining claims and approximately 15 acres of unpatented millsites. Access to the mine is by means of Basin Road which has been maintained jointly by CalMat and the Union Pacific Railroad. CalMat expects to be increasing the amount of ore being removed from the mine in the near future. Also within the 450 acres of patented property, a large limestone deposit exists. This deposit will be mined in the future for cement and/or limestone products.

Grazing

Livestock have been grazing on the Cady Mountain Allotment since the late 1950's. The allotment was classified for ephemeral cattle use in the CDCA Plan (1980). The 1982 CDCA Plan Amendments changed this allotment from ephemeral use to ephemeral/perennial use, and expanded the allotment boundaries with a grazing preference of 2059 animal unit months (AUMs). This preference will not be granted, however, until Congress decides on wilderness designations in the CDCA. Grazing is currently authorized under a temporary non-renewable permit for year-long cattle grazing.

Approximately 16,700 acres of public land within the allotment are also within the Afton Canyon planning area. The surface flow of the Mojave River west of Afton Canyon is one of only two above-ground waters on the Cady Mountain Allotment.

The majority of the allotment boundary is not fenced and unauthorized cattle grazing has been documented in Afton Canyon off of the allotment.

Paleontology

The planning area contains one of the few well-studied Rancholabrean aged fossil assemblages in the Mojave Desert Region. Fossils found in the planning area include Nothrotherium shastense, Mammuthus, Lepus, Canis diris, Canis latrans, Smilodon californicus, felis atrox, Camelops minidokae, Camelops, Hemiauchenia stevensi, Antilocapra, Bison antiquus, Equus conversidens, and Equus. These fossils are sparse, and usually fragmentary.

The Manix Lake Beds in Afton Canyon are a series of lacustrine sediments, interbedded with tufa and tuffs. The Manix beds are unconformably overlain by alluvium, and are cut by the Mojave River and its tributaries.

Some tuffs near the base of the Manix Lake series correlate with others in the region that date to more than one million years old. Radiocarbon dates suggest that the top of the series is about 19,000 years old.

Cultural

The Afton Canyon area, because of its long-standing permanent water supply, has been a focus of human activity for at least the last 12,000 years. In addition to providing resources for local populations, the canyon was also a significant "way station" on the Mojave Road. In prehistoric times this road was the major trade route across the Mojave Desert between the Colorado River area and the Pacific coast. The Mojave Road was also a major historic trade and migration route. The Afton Canyon area was part of the Serrano Indians' traditional resource area. The territorial boundary between the Serrano and neighboring Chemehuevi is located just to the west of Afton Canyon. Through trade, the area was also used by the Mojave and Panamint-Shoshone Indians.
There are 20 known prehistoric archaeological sites in the planning area. These include four quarry sites; six lithic scatters; three lithic scatters with ground stone artifacts; six occupation/multi-use sites; and one possible cave site. The two most common functional site types are lithic scatters and occupation/multi-use sites.

Taken as a whole, the recorded sites suggest two possibly distinct site groupings, one in Afton Canyon and the other in the Cady Mountains badlands and uplands. It is also clear from the record of sites and areas surveyed that there are still more sites to be located in the area. Each survey of portions of the area, especially in the Cady Mountains, has produced more sites. The possible association of occupation and quarry sites in the Cady Mountains is unusual for the Mojave Desert and calls for further study.

In summary, the planning area is characterized by a moderate level of site density; low to moderate (with high in Afton Canyon) level of site diversity; and a moderate to high level of site complexity. Potential scientific uses for the area include the study and interpretation of historic transportation and communications systems, prehistoric riparian and lacustrine resource exploitation, lithic tool manufacture and trade, desert settlement and subsistence patterns, prehistoric trade, cosmology, and world view. Surface disturbing activity, such as use of off-road vehicles and digging, poses a threat to historic and prehistoric resources. The resource base is displaced and loses integrity as a result of these activities.

Land Use

Classifications - BLM Order of Classification R-1217, July 22, 1968 affects all public lands in the planning area. The classification identifies unappropriated public lands, segregated from appropriation under the agricultural land laws. The classification also further segregates the following lands in the plan area from entry (location) under the mining laws:

T. 11N., R. 6E., SBM
Sec. 6, lots 1-4
Sec. 14, lots 1-9, NW1/4NE1/4, N1/2NW1/4, SE1/4
Sec. 15, E1/2SW1/4, SE1/4
Sec. 18, All
Sec. 20, All
Sec. 21, NW1/4, N1/2SE1/4
Sec. 22, All

T. 12N., R. 6E., SBM
Sec. 32, S1/2
Sec. 34, S1/2N1/2, S1/2

T. 12N., R. 7E., SBM
Sec. 30, S1/2 lot 1 of SW1/4, lot 2 of SW1/4, NE1/4SE1/4, S1/2SE1/4

R-1217 and all of the above segregations are still in effect. Withdrawal Review case R-1217-WR is in draft form with the following recommendations:

1. Revoke the classification in its entirety.
2. Revoke the mineral segregation on all public lands within the plan area and replace the mineral segregation with a protective withdrawal for the expanded ACEC.

Classification and Multiple-Use designations, such as R-1217, have been determined to be an inappropriate management tool for the purpose they are used. If a mineral segregation is appropriate, they should be replaced by a protective withdrawal specific to the resources present.

BLM Order of Classification R-258 (September 28, 1959) affects public lands in Sections 30 and 31, T. 12N., R. 7E., SBM. The classification identifies public lands as non-suitable for agriculture.

Withdrawals - Public Water Reserve 107 (E.O. April 17, 1926; posted August 28, 1930) affects the following lands:

T. 11N., R. 6E., SBM
Sec. 18, lot 3, NE1/4SW1/4, N1/2SE1/4
Sec. 20, N1/2NW1/4, NW1/4NE1/4

The PWR segregates from settlement, non-metalliferous mineral location, sale, and entry.

Public Land Order 5224 (July 5, 1972), a withdrawal for the protection of recreational and public values, affects lots 3-4, E1/2SW1/4 and the SE1/4, Section 18, T. 11N., R. 6E., SBM. The withdrawal segregates from entry under the public land laws and from mineral location under the mining laws, but not the mineral leasing laws.

Desert Plan Designations - Public lands in the majority of the plan area are designated as multiple-use class L (limited). The area west of Afton Road, and lower elevations in the southeast plan area, are designated multiple-use class M (moderate).

Utility Corridor BB is three miles wide and follows Interstate 15.

Other Government Plans - The Afton Canyon area lies at the intersection of four designated Department of Defense low-level flight corridors. The San Bernardino County General Plan identifies the area as RCN (rural conservation, one dwelling per minimum 40-acre parcel size).

Existing Authorizations - The rail line through the canyon is authorized by non-exclusive rights-of-way R-01531 (May 12, 1906) and LA-019191 (November 30, 1914) under the Act of March 3, 1875. The railroad right-of-way is 200 feet wide. The railroad station grounds in Sections 17 and 18, T. 11N., R. 6E., SBM were granted under non-exclusive right-of-way R-01529 (May 22, 1906).

Most of the remaining rights-of-way are associated with the Interstate 15 corridor. The highway is authorized under rights-of-way R-01728 (September 21, 1933) and R-0346 (June 19, 1962). R-0346 also authorizes dikes and channels in the SE1/4, Section 30, T. 12N., R. 7E., SBM.

Rights-of-way within the planning area:

R-2441 (December 5, 1969) electrical distribution line within Section 20, T. 11N., R. 6E., SBM

CA-5061 (February 24, 1982) material site and embankment slopes within Section 20, T. 11N., R. 6E., SBM

CA-2953-56 (April 14, 1982) USGS Cave Mountain earthquake detection device within the NW1/4SW1/4, Section 10, T. 11N., R. 6E., SBM

CA-14149 (January 9, 1986) access road ROW to MCI Communication Site

CA-15558 (June 1, 1986) 12kV distribution line to MCI Communication Site

The existing BLM campground in Section 18, T. 11N., R. 6E., SBM is under recreation site right-of-way R-4524 (October 22, 1971 under 44 LD 513). Federal Register Vol. 51, No. 20, Thursday, 1/30/86 designated Afton Canyon a developed recreation site and area. This applies to both the campground and the ACEC. This action prohibits a large number of activities (see CFR 8365.1 and 8365.2).

As part of a larger exchange proposal, the Santa Fe Pacific Realty Company (SFPRC) has offered approximately 4,000 acres in the planning area in accordance with an existing exchange agreement. Negotiations for remaining SPLC lands within the plan area are ongoing.

The MCI Telecommunications Corporation has developed a microwave site on SFPRC land in the NW1/4, Section 5, T. 11N., R. 6E., SBM. Access to the site is via transmission line road R-01730. Since the private lands are involved in an exchange proposal, SFPRC is allowing the site under a five-year lease, subject to annual renewal thereafter. With standard mitigation recommendations to the county and SFPRC, the microwave installation and access route constitute a compatible land use in the event title transferred to the United States.

Recreation

The diverse terrain, scenic vistas, riparian zone and ease of access in the planning area have made it one of the most heavily used recreation areas in the California Desert. This unique combination of features offers a wide range of recreational opportunities.

Under present management, the planning area is used by ORV enthusiasts, equestrians, rockhounds, campers, picnickers, hikers, recreational shooters, hunters, and birdwatchers. Some of these visitors come as individuals, while others visit the planning area in organized groups.

There is one developed campground in Afton Canyon with 22 campsites, vault toilets and potable water. Campers also use a number of other undeveloped sites throughout the planning area. There are no posted restrictions on wood gathering. Day-use, camping, and picnicking occurs throughout the planning area.

Hikers use the riparian zone and various side canyons leading from it. There are no developed hiking trails.

Equestrian clubs and individual riders use the planning area for organized trail rides and casual day-use. Horses are not allowed in the Afton campground, and no equestrian facilities (such as corrals) exist. Recreation permits have not been required for equestrian groups using the area for non-commercial or non-competitive events.

The planning area contains one of the most publicized rockhounding areas in the Mojave Desert. Most collecting occurs in the southwest portion of the planning area, a well known collecting location for both individuals and clubs. This area includes Pyramid and Hanging Canyons

which are listed in Strong's Desert Gem Trails. Over the years intensive rockhounding has depleted the resource and current data indicate that the area is not intensively used.

Individuals, colleges, universities, and museums study the unusual botany, zoology, geology, paleontology, archeology, and hydrology at Afton Canyon. Some come for birdwatching and others for general nature study. No interpretive facilities for these resources have been developed.

Competitive event permits have not been issued within the planning area. These could be permitted under existing OHV designations for the area. Permits for use of the Mojave Road Historic Trail have been authorized for groups of 50 or more off-road vehicles traveling through the area.

Loss of low-impact recreation opportunities have resulted from disturbances in the area by inappropriate off-highway vehicle use and shooting. Recreationists interested in low-impact uses in Afton Canyon are being displaced from this area.

Vehicle Access

The entire planning area falls within an OHV "limited area" designation, with OHV use currently restricted to existing routes of travel. Once access designation has been completed, OHV use will be restricted to designated routes of travel.

The variety of terrain, and the number of roads and trails present, provide the motor vehicle user with diverse recreational opportunities. Old four-wheel trails lead to abandoned mines in the northeast portion of the planning area and in the Cady Mountains to the south and west of Afton Canyon.

Inappropriate and illegal use of vehicles of all kinds in the planning area have caused route proliferation and resource damage. This use has degraded riparian vegetation, damaged fragile soils, disturbed wildlife, adversely affected visual resources, and displaced recreationists interested in the pursuit of low-impact recreation opportunities.

Shooting

Recreational shooting is not allowed in the Afton Canyon ACEC and Afton Canyon Campground (T. 11N., R. 5.E, (SBM); Secs. 14, 24, T. 11N., R. 6E. (SBM); Secs. 14, 15, 18, 20, 28). This was established by Federal Register Notice/Vol. 51, No. 20/Thursday, January 30, 1986. Legal hunting is allowed in the Afton Canyon ACEC and target shooting is allowed in the remainder of the planning area.

Recreational shooting occurs in Afton Canyon, harassing users and creating a safety hazard. It also results in facility vandalism. Campers complain of uncontrolled shooting in and around the campground.

Hunters use the canyon and surrounding uplands for dove, quail, and varmint hunting. In recent years, hunting success has been marginal due to low upland game populations.

Wilderness

The Cady Mountains Wilderness Study Area (WSA, CDCA #251) includes the southern portion of the planning area. A Wilderness Study Report has been prepared which recommends WSA 251, in its entirety, as unsuitable for inclusion into the National Wilderness Preservation System. WSA lands in the planning area will remain under the Interim Management Policy and Guidelines for Lands Under Wilderness Review until Congress releases them from further study or officially designates them as wilderness. If portions of the WSA within the Afton Canyon area are designated as wilderness, they will be managed under the Cady Mountains Wilderness Management Plan.

APPENDIX C: ENVIRONMENTAL ASSESSMENT

ENVIRONMENTAL ASSESSMENT
FOR THE
AFTON CANYON MANAGEMENT PLAN

San Bernardino County
California

Barstow Resource Area
California Desert District
Bureau of Land Management
United States Department of the Interior

I. Introduction

The Afton Canyon planning area contains approximately 23,600 acres of public land located along the Mojave River in central San Bernardino County, California. The area encompasses the Afton Canyon Natural Area, an Area of Critical Environmental Concern. The planning area contains unique and sensitive scenic, cultural, wildlife, recreation, and hydrologic resource values. The administrative actions recommended in the Afton Canyon Management Plan are designated to protect these sensitive values while allowing land uses in a manner which recognizes the importance and sensitivity of the area.

Proposed Action

The Proposed Action is to adopt and implement the Afton Canyon Management Plan.

Alternatives to the Proposed Action

The three alternatives summarized below were analyzed in detail in the environmental assessment for the management option analysis for Afton Canyon that was open to public review in April and May of 1987.

Alternative 1 (No Action Alternative): This alternative would fully adopt the Interim Management Plan for the Afton Canyon area. This management plan calls for an active non-motorized recreation program, in the immediate area of the campground and adjacent river, with emphasis on equestrian use, hiking, and camping. The canyon would be closed to through traffic.

This alternative has some strong points relative to non-motorized recreation. However, it is not preferred because it does not recognize resources in the lands adjacent to the canyon and their influence on the canyon itself. While potentially reasonable for recreation management, this alternative generally ignores the management needs of other resources and non-recreational users. Bighorn sheep habitat on the south rim and in Afton Canyon would continue to be disrupted. Route proliferation in adjacent areas would remain unaddressed, as would the appropriateness of other activities occurring in these areas.

Alternative 2 (Protection Alternative): This management alternative would maximize resource protection and allow few, if any, human activities in the planning area. All access, except Afton Road and the railroad right-of-way, would be closed to all but specifically authorized uses. The campground would be removed and camping would be prohibited. There would be active reclamation of previous disturbance such as roads, trails, and camping areas. Tamarisk eradication and replacement with native species would be mandated. Future use authorizations would be discouraged and/or denied where possible.

This alternative is not considered viable because it fails to consider the compatibility of some land uses with other resources. All recreation use would be discouraged, even those that pose little or no threat to the natural resources of the area such as hiking, rockhounding, sightseeing, and nature study.

Alternative 3 (MAC Alternative): This alternative was described in detail in the management option analysis. It designates all routes as either open or limited with seasonal restrictions; establishes an overflow/group camp area and two day camps; and mandates a phased comprehensive cultural survey, extensive resource monitoring, expansion of the grazing allotment, and a big game guzzler on the south canyon rim.

This alternative is not preferred because it fails to adequately resolve known resource issues in the planning area and would allow uses to continue to jeopardize fragile resource values. Vehicle use and cattle grazing would continue in areas where the goal is to restore riparian vegetation. Use of the area by vehicles would be encouraged by expansion of camping areas.

Illustration 10 on the following page provides a comparison matrix to illustrate the impacts of the various alternatives.

Affected Environment

A detailed description of the affected environment is provided in Appendix B of the Afton Canyon Management Plan.

Environmental Consequences

Anticipated impacts from implementing the preferred alternative are:

1. Slight disturbance to soils and vegetation will occur from sign placement, construction of fences, and establishing monitoring plots.
2. Any action resulting in surface disturbance may cause impacts to cultural resources.
3. The proposed action will result in limitations on opportunities for motorized vehicle use and related recreational activities.
4. Camping and wood collection opportunities will be restricted.
5. Wildlife, vegetation, and cultural resources will be enhanced by implementation of planned actions such as restricting motor vehicle access, motor vehicle use, firearms use, wood collection, camping, and tamarisk eradication.
6. Wildlife resources will be enhanced by the removal of tamarisk and planting of native perennial species and reclaiming closed routes.
7. Visitor and recreational opportunities will be enhanced by the placement of interpretive signs in the campground area.

ILLUSTRATION 10 IMPACT COMPARISON MATRIX

Resource	ALTERNATIVES			
	Proposed Action	Alt. 1 No Action (Interim)	Alt. 2 Protection	Alt. 3 MAC
Water	+	0	+	+
Vegetation	+	-	+	+
Wildlife	+	+	+	-
Visual	+	+	+	-
Soil	+	+	+	-
Geology	0	0	0	0
Mining	0	0	-	0
Paleontology	0	0	+	0
Cultural	+	-	+	+
Recreation	+	+	-	0
Access	-	-	-	0
Shooting	-	0	-	-
Wilderness	+	-	+	-

+ = Positive Affect - = Negative Affect 0 = Neutral

8. Recreational opportunities for such activities as hiking, nature study, and birdwatching will be enhanced by actions that will result in less surface disturbance, greater species density and diversity, and more natural surroundings.
9. The proposed action will have no effect on any federally-listed threatened or endangered plants or animals or their critical habitat.
10. The proposed action will affect a wilderness study area but is non-impairing as defined under the IMP.
11. The proposed action will maximize compatible uses while ensuring concern for the resources within the planning area.

Mitigating Measures

The proposed management plan recognizes the need to allow for development and land use management within the planning area in a responsible manner that also recognizes the need to protect sensitive and unique cultural, visual, recreational, and biological resources present in the area. Individual land use requests will be reviewed on a case-by-case basis for compatibility with the management goals defined in the plan. The specific impacts resulting from each case will be addressed in separate environmental assessments.

The following mitigating measures will be used during plan implementation to reduce impacts:

1. Prior to surface disturbance, the prospective sites will be inventoried for cultural values, sensitive wildlife resources, and sensitive plant species. Mitigation will be developed to alleviate potential impacts of the proposed disturbance. If this is not possible and an alternative site is not available, then the proposal will not be allowed. This analysis will be documented in a project specific environmental assessment.
2. BLM patrols will be used to encourage compliance with use and access restrictions, provide assistance where needed, and disseminate information.
3. All actions occurring within or potentially impacting the Cady Mountains Wilderness Study Area will be reviewed for compliance with the BLM's "Interim Management Policies and Guidelines for Lands under Wilderness Review (IMP)" prior to implementation. Failure to meet the IMP will result in relocation or denial of the action.

Short-term Uses vs. Long-term Productivity

The short-term impacts of implementing the proposed action will be surface disturbance associated with sign placement, installing fences and barriers, and rehabilitating the riparian areas and closed routes. Long-term productivity of the resource will be enhanced by these actions by improving wildlife habitat, reducing erosion, and upgrading the visual resources in the area. Long-term impacts associated with the

proposed action will be in the form of reduced motorized recreation opportunities.

Irreversible and Irretrievable Commitment of Resources

Implementation of the proposed action will not result in any irreversible or irretrievable commitment of resources.

Cumulative Impacts

Implementation of the proposed action is not expected to result in significant cumulative impacts to any resource base. It is expected to reverse the accumulation of impacts from route proliferation and tamarisk invasion.

The environmental impacts of the proposed action have been addressed. On the basis of this environmental assessment, it has been determined that, after mitigation, there will be no significant impacts resulting from the implementation of the proposed action. Therefore, preparation of an Environmental Impact Statement pursuant to Section 102(2)(c) of the National Environmental Policy Act of 1969 is not required.

Recommended by:

Sharon Paris — 5/30/89

Environmental Coordinator, Barstow Resource Area — Date

Approved by:

Alden Sievers — 5/30/89

Area Manager, Barstow Resource Area — Date

APPENDIX D: VEHICLE ROUTE DESIGNATION RECORDS OF DECISION

CALIFORNIA DESERT DISTRICT
VEHICLE ROUTE DESIGNATION RECORD OF DECISION

1. LAND CLASS (C) (L) (M) (I) (U) (WSA) (ACEC)
2. ORV AREA DESIGNATION: (OPEN) (CLOSED) (LIMITED) (UNDESIGNATED)
3. ROUTE NUMBER(S):

Patrol Sector		Location Code		Number		
A	F	2	4	0	2	3
A	F	3	1	0	0	3
A	F	2	5	0	1	0

4. RESOURCE AREA: (R) (B) (N) (I) (E)
5. TOPOGRAPHIC BASE MAP(S): Cave Mountain (7.5') or (15')
   Dunn (7.5') or (15')
6. DESIGNATION CRITERIA - 43 CFR 8342.1

(a) Areas and trails shall be located to minimize damage to soil, watershed, vegetation, air, or other resources of the public lands, and to prevent impairment of wilderness suitability.

(b) Areas and trails shall be located to minimize harassment of wildlife or significant disruption of wildlife habitats. Special attention will be given to protection of [illegible] and endangered species and their habitats.

(c) Areas and trails shall be located to minimize conflicts between off-road vehicle use and other existing or proposed recreational uses of the same or neighboring public lands, and to ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors.

(d) Areas and trails shall not be located in officially designated wilderness areas or primitive areas. Areas and trails shall be located in natural areas only if the authorized officer determines that off-road vehicle use in such locations will not adversely affect their natural, aesthetic, scenic, or other values for which such areas are established.

7. RECOMMENDATION - PROPOSED DESIGNATION: (OPEN) (LIMITED) (CLOSED)
   IF LIMITED EXPLAIN: _____

8. BASED ON 8342.1 CRITERIA (CRITERION) (a) (b) (c) (d)
9. ROUTE SPECIFIC RATIONALE: Routes are open to provide for public access into the north bench of the Afton Canyon area.

(continue on reverse)

10. RECOMMENDED BY: Harold Johnson 5/10/89 Date
    _____ 5/10/89 Date
    Jim Read _____ 5/11/89 Date
11. DECISION: APPROVED BY: Alden Sievers 5/11/89 Date
    Area Manager

CALIFORNIA DESERT DISTRICT
VEHICLE ROUTE DESIGNATION RECORD OF DECISION

1. LAND CLASS (C) (L) (M) (I) (U) (WSA) (ACEC)
2. ORV AREA DESIGNATION: (OPEN) (CLOSED) (LIMITED) (UNDESIGNATED)
3. ROUTE NUMBER(S):

Patrol	Sector	Location Code		Number		
A	F	3	2	0	0	6
A	F	2	5	0	2	5
A	F	2	5	0	3	1

4. RESOURCE AREA: (R) (B) (N) (I) (E)
5. TOPOGRAPHIC BASE MAP(S): Cave Mountain (7.5') or (15')
   Dunn (7.5') or (15')
6. DESIGNATION CRITERIA - 43 CFR 8342.1

(a) Areas and trails shall be located to minimize damage to soil, watershed, vegetation, air, or other resources of the public lands, and to prevent impairment of wilderness suitability.

(b) Areas and trails shall be located to minimize harassment of wildlife or significant disruption of wildlife habitats. Special attention will be given to protect[ion] of [illegible] or threatened species and their habitats.

(c) Areas and trails shall be located to minimize conflicts between off-road vehicle use and other existing or proposed recreational uses of the same or neighboring public lands, and to ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors.

(d) Areas and trails shall not be located in officially designated wilderness areas or primitive areas. Areas and trails shall be located in such areas only if the authorized officer determines that off-road vehicle use in such locations will not adversely affect their natural, aesthetic, scenic, or other values for which such areas are established.

7. RECOMMENDATION - PROPOSED DESIGNATION: (OPEN) (LIMITED) (CLOSED)
   IF LIMITED EXPLAIN: _____
8. BASED ON 8342.1 CRITERIA (CRITERION) (a) (b) (c) (d)
9. ROUTE SPECIFIC RATIONALE: The Mojave Road (AF 326) is closed from ½ mile east of the middle railroad trestle to the intersection with route AF 2531 to protect sensitive riparian resources. From ½ mile east of the middle trestle the Mojave Road follows AF 2525, the Afton Canyon Road, and AF 2531. These routes are designated open.

(continue on reverse)

10. RECOMMENDED BY: Harold Johnson — Date 5/10/89
    — Date 5/10/89
    — Date 5/4/89
11. DECISION: APPROVED BY: Alden Sievers, Area Manager — Date 5/11/89

CALIFORNIA DESERT DISTRICT
VEHICLE ROUTE DESIGNATION RECORD OF DECISION

1. LAND CLASS (C) (L) (M) (I) (U) (WSA) (ACEC)
2. ORV AREA DESIGNATION: (OPEN) (CLOSED) (LIMITED) (UNDESIGNATED)
3. ROUTE NUMBER(S):

Patrol	Sector	Location Code		Number		
A	F	2	5	0	1	1
A	F	2	0	0	0	4

4. RESOURCE AREA: (R) (B) (N) (I) (E)
5. TOPOGRAPHIC BASE MAP(S): Cave Mountain (7.5') or (15')
   Hidden Valley East (7.5') or (15')
   Dunn 7.5'
6. DESIGNATION CRITERIA - 43 CFR 8342.1

(a) Areas and trails shall be located to minimize damage to soil, watershed, vegetation, air, or other resources of the public lands, and to prevent impairment of wilderness suitability.

(b) Areas and trails shall be located to minimize harassment of wildlife or significant disruption of wildlife habitats. Special attention will be given to protection of endangered or threatened species and their habitats.

(c) Areas and trails shall be located to minimize conflicts between off-road vehicle use and other existing or proposed recreational uses of the same or neighboring public lands, and to ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors.

(d) Areas and trails shall not be located in officially designated wilderness areas or primitive areas. Areas and trails shall be located in natural areas only if the authorized officer determines that off-road vehicle use in such locations will not adversely affect their natural, aesthetic, scenic, or other values for which such areas are established.

7. RECOMMENDATION - PROPOSED DESIGNATION: (OPEN) (LIMITED) (CLOSED)
   IF LIMITED EXPLAIN: _____
8. BASED ON 8342.1 CRITERIA (CRITERION) (a) (b) (c) (d)
9. ROUTE SPECIFIC RATIONALE: AF 2511 is closed west of the intersection with route AF 2516, and AF 204 is closed west of the intersection with AF 202 to minimize disturbance of bighorn sheep. See page 35 of the Afton Canyon Management Plan.

(continue on reverse)

10. RECOMMENDED BY: Harold Johnson — Date 5/10/89
    _____ — Date 5/10/89
    _____ — Date 5/11/89
11. DECISION: APPROVED BY: Alden Sievers, Area Manager — Date 5/11/89

CALIFORNIA DESERT DISTRICT
VEHICLE ROUTE DESIGNATION RECORD OF DECISION

1. LAND CLASS (C) (L) (M) (I) (U) (WSA) (ACEC)
2. ORV AREA DESIGNATION: (OPEN) (CLOSED) (LIMITED) (UNDESIGNATED)
3. ROUTE NUMBER(S):

Patrol	Sector	Location Code		Number		
A	F	2	5	0	0	3

4. RESOURCE AREA: (R) (B) (N) (I) (E)

5. TOPOGRAPHIC BASE MAP(S): Cave Mountain (7.5') or (15')
Dunn (7.5') or (15')

6. DESIGNATION CRITERIA - 43 CFR 8342.1

(a) Areas and trails shall be located to minimize damage to soil, watershed, vegetation, air or other resources of the public lands, and to prevent impairment of wilderness suitability.

(b) Areas and trails shall be located to minimize harassment of wildlife or significant disruption of wildlife habitats. Special attention will be given to protection of endangered or threatened species and their habitats.

(c) Areas and trails shall be located to minimize conflicts between off-road vehicle use and other existing or proposed recreational uses of the same or neighboring public lands, and to ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors.

(d) Areas and trails shall not be located in officially designated wilderness areas or primitive areas. Areas and trails shall be located in natural areas only if the authorized officer determines that off-road vehicle use in such locations will not adversely affect their natural, aesthetic, scenic, or other values for which such areas are established.

7. RECOMMENDATION - PROPOSED DESIGNATION: (OPEN) (LIMITED) (CLOSED)

IF LIMITED EXPLAIN: ~~_____~~

the "challenge" activities associated with Suicide Hill are inconsistent with the route non-proliferation philosophy of the planning area, and because

8. BASED ON 8342.1 CRITERIA (CRITERION) (a) (b) (c) (d)

9. ROUTE SPECIFIC RATIONALE: Route AF 253 is open between the Afton Canyon road and the intersection with AF 258 to provide for public access on the north bench of the Afton Canyon area. The route is closed east of the intersection with AF 258 to its eastern terminus because it follows an ~~inappropriate and~~ unsafe route down "suicide hill" on Cave Mountain and traverses the middle of the active CalMat mining operation.

(continue on reverse)

10. RECOMMENDED BY: Harold Johnson 5/10/89 Date
5/10/89 Date
5/11/89 Date

11. DECISION: APPROVED BY: Alden Sievers Area Manager 5/11/89 Date

CALIFORNIA DESERT DISTRICT
VEHICLE ROUTE DESIGNATION RECORD OF DECISION

1. LAND CLASS (C) (L) (M) (I) (U) (WSA) (ACEC)
2. ORV AREA DESIGNATION: (OPEN) (CLOSED) (LIMITED) (UNDESIGNATED)
3. ROUTE NUMBER(S): A F 2 5 0 0 4

Patrol	Sector	Location Code		Number		
A	F	2	5	0	0	5
A	F	2	5	0	0	6

4. RESOURCE AREA: (R) (B) (N) (I) (E)
5. TOPOGRAPHIC BASE MAP(S): Dunn (7.5') or (15')
(7.5') or (15')
6. DESIGNATION CRITERIA - 43 CFR 8342.1

(a) Areas and trails shall be located to minimize damage to soil, watershed, vegetation, air, or other resources of the public lands, and to prevent impairment of wilderness suitability.

(b) Areas and trails shall be located to minimize harassment of wildlife or significant disruption of wildlife habitats. Special attention will be given to protecting the habitats of threatened species and their habitats.

(c) Areas and trails shall be located to minimize conflicts between off-road vehicle use and other existing or proposed recreational uses of the same or neighboring public lands, and to ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors.

(d) Areas and trails shall not be located in officially designated wilderness areas or primitive areas. Areas and trails shall be located in natural areas only if the authorized officer determines that off-road vehicle use in such locations will not adversely affect their natural, aesthetic, scenic, or other values for which such areas are established.

7. RECOMMENDATION - PROPOSED DESIGNATION: (OPEN) (LIMITED) (CLOSED)
IF LIMITED EXPLAIN: _____
8. BASED ON 8342.1 CRITERIA (CRITERION) (a) (b) (c) (d)
9. ROUTE SPECIFIC RATIONALE: The above routes are closed to eliminate disturbance to the Cady Mountain bighorn sheep herd and to eliminate vehicular traffic from crossing riparian areas to access side canyons. (see page 35 of the Afton Canyon Management Plan)

(continue on reverse)

10. RECOMMENDED BY: Harold Johnson 5/10/89 Date
5/10/89 Date
5/11/89 Date
11. DECISION: APPROVED BY: Alden Sievers 5/11/89 Date
Area Manager

CALIFORNIA DESERT DISTRICT
VEHICLE ROUTE DESIGNATION RECORD OF DECISION

1. LAND CLASS (C) (L) (M) (I) (U) (WSA) (ACEC)
2. ORV AREA DESIGNATION: (OPEN) (CLOSED) (LIMITED) (UNDESIGNATED)
3. ROUTE NUMBER(S):

Patrol	Sector	Location Code		Number		
A	F	2	5	0	2	7
A	F	2	5	0	0	2
A	F	2	5	0	2	6
A	F	2	5	0	0	3a

4. RESOURCE AREA: (R) (B) (N) (I) (E)
5. TOPOGRAPHIC BASE MAP(S): Cave Mountain (7.5') or (15')
   Dunn (7.5') or (15')
6. DESIGNATION CRITERIA - 43 CFR 8342.1

(a) Areas and trails shall be located to minimize damage to soil, watershed, vegetation, air, or other resources of the public lands, and to prevent impairment of wilderness suitability.

(b) Areas and trails shall be located to minimize harassment of wildlife or significant disruption of wildlife habitats. Special attention will be given to protection of endangered or threatened species and their habitats.

(c) Areas and trails shall be located to minimize conflicts between off-road vehicle use and other existing or proposed recreational uses of the same or neighboring public lands, and to ensure the compatibility of such use with existing conditions in populated areas, taking into account noise and other factors.

(d) Areas and trails shall not be located in officially designated wilderness areas or primitive areas. Areas and trails shall be located in natural areas only if the authorized officer determines that off-road vehicle use in such locations will not adversely affect their natural, aesthetic, scenic, or other values for which such areas are established.

7. RECOMMENDATION - PROPOSED DESIGNATION: (OPEN) (LIMITED) (CLOSED)
   IF LIMITED EXPLAIN: _____
8. BASED ON 8342.1 CRITERIA (CRITERION) (a) (b) (c) (d)
9. ROUTE SPECIFIC RATIONALE: Routes above are closed to eliminate disturbance to soil, watershed, and visual resource values.

(continue on reverse)

10. RECOMMENDED BY: Harold Johnson — Date 5/10/89
    _____ — Date 5/10/89
    Jim Kennedy — Date 5/11/89
11. DECISION: APPROVED BY: Alden Sievers, Area Manager — Date 5/11/89

CALIFORNIA DESERT DISTRICT
VEHICLE ROUTE DESIGNATION RECORD OF DECISION

1. LAND CLASS (C) (L) (M) (I) (U) (WSA) (ACEC)
2. ORV AREA DESIGNATION: (OPEN) (CLOSED) (LIMITED) (UNDESIGNATED)
3. ROUTE NUMBER(S):

Patrol Sector	Location Code	Number
A F	2 0	0 0 6
A F	2 0	0 0 2
A F	2 5	0 1 4
A F	2 5	0 1 9
A F	2 0	0 0 3

4. RESOURCE AREA: (R) (B) (N) (I) (E)
5. TOPOGRAPHIC BASE MAP(S): Cave Mountain (7.5') or (15')
   Hidden Valley East (7.5') or (15')
   Hidden Valley West 7.5'
6. DESIGNATION CRITERIA - 43 CFR 8342.1

(a) Areas and trails shall be located to minimize damage to soil, watershed, vegetation, air, or other resources of the public lands and to prevent impairment of wilderness suitability.

(b) Areas and trails shall be located to minimize harassment of wildlife or significant disruption of wildlife habitats. Special attention will be given to protection of endangered or threatened species and their habitats.

(c) Areas and trails shall be located to minimize conflicts between off-road vehicle use and other existing or proposed recreational uses of the same or neighboring public lands, and to ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors.

(d) Areas and trails shall not be located in officially designated wilderness areas or primitive areas. Areas and trails shall be located in natural areas only if the authorized officer determines that off-road vehicle use in such locations will not adversely affect their natural, aesthetic, scenic, or other values for which such areas are established.

7. RECOMMENDATION - PROPOSED DESIGNATION: (OPEN) (LIMITED) (CLOSED)

   IF LIMITED EXPLAIN: _____

8. BASED ON 8342.1 CRITERIA (CRITERION) (a) (b) (c) (d)
9. ROUTE SPECIFIC RATIONALE: The above routes are closed to eliminate disturbance to the Cady Mountain bighorn sheep herd. See page 35 of the Afton Canyon Management Plan.

(continue on reverse)

10. RECOMMENDED BY: Harold Johnson 5/10/89 Date
    _____ 5/10/89 Date
    Jim Read 5/10/89 Date
11. DECISION: APPROVED BY: Alden Sievers 5/11/89 Date
    Area Manager

CALIFORNIA DESERT DISTRICT
VEHICLE ROUTE DESIGNATION RECORD OF DECISION

1. LAND CLASS (C) (L) (M) (I) (U) (WSA) (ACEC)
2. ORV AREA DESIGNATION: (OPEN) (CLOSED) (LIMITED) (UNDESIGNATED)
3. ROUTE NUMBER(S):

Patrol Sector		Location Code		Number		
A	F	2	5	0	1	3
A	F	2	5	0	1	5
A	F	2	5	0	1	6
A	F	2	5	0	1	7
A	F	2	5	0	0	7

4. RESOURCE AREA: (R) (B) (N) (I) (E)
5. TOPOGRAPHIC BASE MAP(S): Cave Mountain (7.5') or (15')
   Hidden Valley East (7.5') or (15')
6. DESIGNATION CRITERIA - 43 CFR 8342.1

(a) Areas and trails shall be located to minimize damage to soil, watershed, vegetation, air, or other resources of the public lands, and to prevent impairment of wilderness suitability.

(b) Areas and trails shall be located to minimize harassment of wildlife or significant disruption of wildlife habitats. Special attention will be given to protection of endangered or threatened species and their habitats.

(c) Areas and trails shall be located to minimize conflicts between off-road vehicle use and other existing or proposed recreational uses of the same or neighboring public lands, and to ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors.

(d) Areas and trails shall not be located in officially designated wilderness areas or primitive areas. Areas and trails shall be located in natural areas only if the authorized officer determines that off-road vehicle use in such locations will not adversely affect their natural, aesthetic, scenic, or other values for which such areas are established.

7. RECOMMENDATION - PROPOSED DESIGNATION: (OPEN) (LIMITED) (CLOSED)

   IF LIMITED EXPLAIN: _____

8. BASED ON 8342.1 CRITERIA (CRITERION) (a) (b) (c) (d)
9. ROUTE SPECIFIC RATIONALE: The above routes are closed to eliminate disturbance to the Cady Mountain bighorn sheep herd. See page 35 of the Afton Canyon Management Plan.

(continue on reverse)

10. RECOMMENDED BY: Harold Johnson 5/10/89 Date
    5/10/89 Date
    5/4/89 Date
11. DECISION: APPROVED BY: Alden Sievers 5/11/89
    Area Manager Date

CALIFORNIA DESERT DISTRICT
VEHICLE ROUTE DESIGNATION RECORD OF DECISION

1. LAND CLASS (C) (L) (M) (I) (U) (WSA) (ACEC)
2. ORV AREA DESIGNATION: (OPEN) (CLOSED) (LIMITED) (UNDESIGNATED)
3. ROUTE NUMBER(S):

Patrol	Sector	Location Code		Number		
A	F	2	5	0	1	2
A	F	2	5	0	0	1
A	F	2	5	0	0	9
A	F	2	5	0	0	8
A	F	2	5	0	2	8

4. RESOURCE AREA: (R) (B) (N) (I) (E)
5. TOPOGRAPHIC BASE MAP(S): Cave Mountain (7.5') or (15')
(7.5') or (15')
6. DESIGNATION CRITERIA - 43 CFR 8342.1

(a) Areas and trails shall be located to minimize damage to soil, watershed, vegetation, air, or other resources of the public lands, and to prevent impairment of wilderness suitability.

(b) Areas and trails shall be located to minimize harassment of wildlife or significant disruption of wildlife habitats. Special attention will be given to protect endangered or threatened species and their habitats.

(c) Areas and trails shall be located to minimize conflicts between off-road vehicle use and other existing or proposed recreational uses of the same or neighboring public lands, and to ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors.

(d) Areas and trails shall not be located in officially designated wilderness areas or primitive areas. Areas and trails shall be located in natural areas only if the authorized officer determines that off-road vehicle use in such locations will not adversely affect their natural, esthetic, scenic, or other values for which such areas are established.

7. RECOMMENDATION - PROPOSED DESIGNATION: (OPEN) (LIMITED) (CLOSED)
IF LIMITED EXPLAIN: _____
8. BASED ON 8342.1 CRITERIA (CRITERION) (a) (b) (c) (d)
9. ROUTE SPECIFIC RATIONALE: Routes above are closed to eliminate disturbance to soil, watershed, and visual resource values.

(continue on reverse)

10. RECOMMENDED BY: Harold Johnson — Date 5/10/89
Date 5/10/89
Date 5/4/89
11. DECISION: APPROVED BY: Alden Sievers, Area Manager — Date 5/11/89

CALIFORNIA DESERT DISTRICT
VEHICLE ROUTE DESIGNATION RECORD OF DECISION

1. LAND CLASS (C) (L) (M) (I) (U) (WSA) (ACEC)
2. ORV AREA DESIGNATION: (OPEN) (CLOSED) (LIMITED) (UNDESIGNATED)
3. ROUTE NUMBER(S):

Patrol	Sector	Location Code		Number		
A	F	2	5	0	2	0
A	F	1	9	0	2	2
A	F	1	9	0	0	2

4. RESOURCE AREA: (R) (B) (N) (I) (E)
5. TOPOGRAPHIC BASE MAP(S): Hidden Valley West (7.5') or (15')
   Hidden Valley East (7.5') or (15')
   Dunn 7.5'
6. DESIGNATION CRITERIA - 43 CFR 8342.1

(a) Areas and trails shall be located to minimize damage to soil, watershed, vegetation, air, or other resources of the public lands, and to [illegible] Department of Wilderness [illegible].

(b) Areas and trails shall be located to minimize harassment of wildlife or significant disruption of wildlife habitats. Special attention will be given to [illegible] and threatened species and their habitats.

(c) Areas and trails shall be located to minimize conflicts between off-road vehicle use and other existing or proposed recreational uses of the same or neighboring public lands, and to ensure the compatibility of such uses with existing conditions in populated areas, taking into account noise and other factors.

(d) Areas and trails shall not be located in officially designated wilderness areas or primitive areas. Areas and trails shall be located [illegible] areas only if the authorized officer determines that off-road vehicle use in such locations will not adversely affect their natural, esthetic, scenic, or other values for which such areas are established.

7. RECOMMENDATION - PROPOSED DESIGNATION: (OPEN) (LIMITED) (CLOSED)
   IF LIMITED EXPLAIN: _____
8. BASED ON 8342.1 CRITERIA (CRITERION) (a) (b) (c) (d)
9. ROUTE SPECIFIC RATIONALE: The above routes are closed to eliminate disturbance to the Cady Mountain bighorn sheep herd. See page 35 of the Afton Canyon Management Plan.

(continue on reverse)

10. RECOMMENDED BY: Harold Johnson — Date 5/10/89
    — Date 5/10/89
    — Date 5/11/89
11. DECISION: APPROVED BY: Alden Sievers, Area Manager — Date 5/11/89

APPENDIX E: AFTON CANYON PUBLIC COMMENT SUMMARY

The public comment period for the Draft Afton Canyon Management Plan began on September 30, 1988 and ended December 21, 1988 (a total of 82 days).

A public meeting was held in Barstow, California on November 1, 1988 to hear public comments on the draft Management Plan. The meeting was attended by 27 people. Eight individuals offered comments on the draft plan.

A second public meeting was held in Riverside, California on November 2, 1988 for the same purpose. This meeting was attended by 45 people. Thirteen individuals offered comments on the draft plan.

During this 82 day period 675 written comments were received. A summation of these written comments is listed below:

Comments favoring: 585*
Comments opposed : 80**
Comments neutral : 10
Total comments : 675

* 12 form letters
**51 form letters

Comments received are summarized below identifying the number of commentors, the organizations espousing the position, and the BLM's response.

COMMENTS: Ban off-road vehicles from the area (421 commentors including the Wilderness Society, Defenders of Wildlife, Desert Survivors, Audubon Society, Sierra Club, et al.); Do not ban motorcycles and ATVs from the area (3 commentors including the National Outdoor Coalition, CORVA, High Desert Multiple Use Coalition); Remove vehicle routes (37 commentors including the Sierra Club, Audubon Society, et al); Keep vehicle routes open (11 commentors including the National Outdoor Coalition, CORVA, California Association of 4WD Clubs Inc., High Desert Multiple Use Coalition, et al); Reroute the Mojave Road out of the riparian area (20 commentors including the Sierra Club, The Wilderness Society, et al); Do not reroute the Mojave Road (11 commentors including the Associated Blazers of California, California Association of 4WD Clubs Inc.,High Desert Multiple Use Coalition, CORVA, National Outdoor Coalition, et al).

RESPONSE: Off-highway vehicle use in the planning area will be highly restricted: a limited number of routes will be designated open, the Mojave Road will be rerouted out of the riparian area, and law enforcement and visitor service activities will be increased (see management actions #5, #6, and #10 on pages 12, 15, and 18 in the plan). The Afton area was never intended to be an OHV area; the Desert Plan

designated it as an area of critical environmental concern because of its scenic, riparian, and wildlife values. A minimum network of open routes has been designated open to provide for public access to the planning area in a manner to avoid impacts to scenic, riparian, and wildlife values.

Rerouting of the Mojave Road for approximately two and one-half miles is necessary to stop the degradation of important riparian resources (water, vegetation, and soil) in the western end of the canyon. This reroute does not remove the Mojave Road traveler from viewing portions of, or walking through, the canyon presently used by vehicles. Most of the original route can be viewed from the rerouted segment. The "caves" found in the horseshoe area will be available by a short hike from the middle trestle parking area.

A question has been raised about the safeness of rerouting the Mojave Road along the railroad. At present, visitors to Afton Canyon use the railroad access road on a continuous basis; no conflict with passing trains has occurred. The reroute east of the middle trestle does not involve the railroad road next to the tracks, rather it involves the lower road which is well below and away from the tracks. The only areas where possible conflicts between trains and rerouted Mojave Road trekkers exist are at the cut on the east end of the middle trestle (about 100 yards) and west of the middle trestle (about 300 yards). This safety question was discussed with the Union Pacific Railroad; if the railroad so requires, the BLM will build fences to the railroads specifications to alleviate the conflict.

One commentor stated that the proposed rerouting of the Mojave Road breaks an agreement with the users establishing the Mojave Road as a recreation trail. However, the "Cooperative Management Agreement Between the Bureau of Land Management and the Southern District of the California Association of 4WD Clubs Inc. for the Management of the Mojave Road" (1984) states that "Vehicle traffic shall be allowed to travel unimpeded along the entire length of the Mojave Road whenever compatible with other resource values." Clearly, this statement applies to the Afton Canyon area where the riparian values are being degraded by vehicle use on the Mojave Road.

The use of motorcycles and ATVs will be allowed on routes within the planning area that are designated as open, including the Mojave Road. All vehicle use, including motorcycles and ATVs, will be strictly controlled to eliminate conflicts between vehicles and the resource values found in the Afton Canyon area. Management action #4 on page 12 of the Plan states that "If these measures are not successful and the Afton Canyon area continues to be used for free-play activity by motorcycles and ATVs, prohibition of these vehicles (motorcycles and ATVs) will be initiated."

COMMENT: Stronger law enforcement is needed (127 commentors including Desert Survivors, California Association of 4WD Clubs Inc., Sierra Club, High Desert Multiple Use Coalition, Audubon Society, National Outdoor

Coalition, California Trails Conservancy, Friends of Wildlife, Save the World, et al.)

RESPONSE: A higher level of enforcement and visitor services will be provided in the Afton Canyon area (see management action # 10 on page 18 of the plan). It is anticipated that at least one BLM employee will be working (on average) in Afton Canyon and that 3 or more law enforcement personnel will be assigned to the area during high-use periods.

COMMENT: Tamarisk should be removed from the Afton area (121 commentors including California Association of 4WD Clubs Inc., Wilderness Society, Desert Survivors, U.S. Fish and Wildlife Service, California Native Plant Society, Audubon Society, Sierra Club, Conservation Call Inc., Save the World, et al.)

RESPONSE: Tamarisk will be removed from the Afton Canyon area (see management action # 11 on page 18-21 of the plan). Removal of this exotic species that uses more than twice the water of native plant species, that has little value to wildlife, and that chokes out native plant species, is crucial to returning Afton Canyon to a rich, riparian ecosystem.

COMMENT: Livestock grazing should be eliminated from Afton Canyon (114 commentors including the Wilderness Society, Defenders of Wildlife, U.S. Fish and Wildlife Service, California Native Plant Society, Citizens for Mojave National Park, Save the World, et al).

RESPONSE: Livestock grazing will continue to be prohibited from the canyon bottom (downstream from the upper trestle) and from the planning area north of the river (see management action #13, page 21 of the Plan). Fences will be installed to contain the cattle within the Cady Mountains and Cronese Lake Allotments.

The Afton Canyon Natural Area Management Plan is not the appropriate place to address the much larger issue of elimination of the Cady Mountains Allotment. The primary argument given by some commentors for elimination of grazing in the Cady Mountains Allotment concerns the possibility of disease transmission from cattle to bighorn sheep. Diseases can be transmitted from livestock to bighorn sheep, but no evidence of disease has been documented in the Cady Mountain herd.

COMMENT: Native vegetation and habitat should be restored (110 commentors including the Wilderness Society, Desert Survivors, U.S. Fish and Wildlife Service, California Native Plant Society, Sierra Club, Desert Protective Council Inc., Audubon Society, et al).

RESPONSE: A primary management goal of the Afton Plan is to restore native vegetation to the Afton area, particularly the riparian and adjacent areas. Tamarisk will be removed and native vegetation will be replanted (see management action #12 on page 21 of the Plan).

COMMENT: No shooting in Afton Canyon (56 commentors including the California Association of 4WD Clubs Inc., Wilderness Society, Sierra Club, et al.

RESPONSE: Shooting restrictions will be implemented in the planning area (see management action #9 on page 16 of the Plan). Within the ACEC, shooting will be restricted to legal hunting using only shotguns with non-solid projectiles. Within one-half mile of campgrounds and formal parking areas, all discharging of firearms will be prohibited. Within the remainder of the planning area, shooting and hunting will be allowed consistent with current Department of Fish and Game regulations. The above restrictions are being implemented to protect the high volume of visitors who visit Afton Canyon.

COMMENT: Afton Campground should be closed (5 commentors including the National Outdoor Coalition, Associated Blazers of California, CORVA, et al).

RESPONSE: The Afton Campground will not be closed (see management action #8 on page 16 of the Plan). The impacts of inappropriate vehicle use in the planning area are not caused by the campground per se, and closing the campground will not resolve the vehicle impact problems. Other actions are being taken to deal with off-highway vehicle abuse.

COMMENT: Remove burros (5 ; U.S. Fish and Wildlife Service, et al).

BLM RESPONSE:

The Afton Canyon area was not designated as a Burro Management Area in the Desert Plan. Burros in the area are thought to be released adopted animals. They will be removed by gathering them for the adoption program.

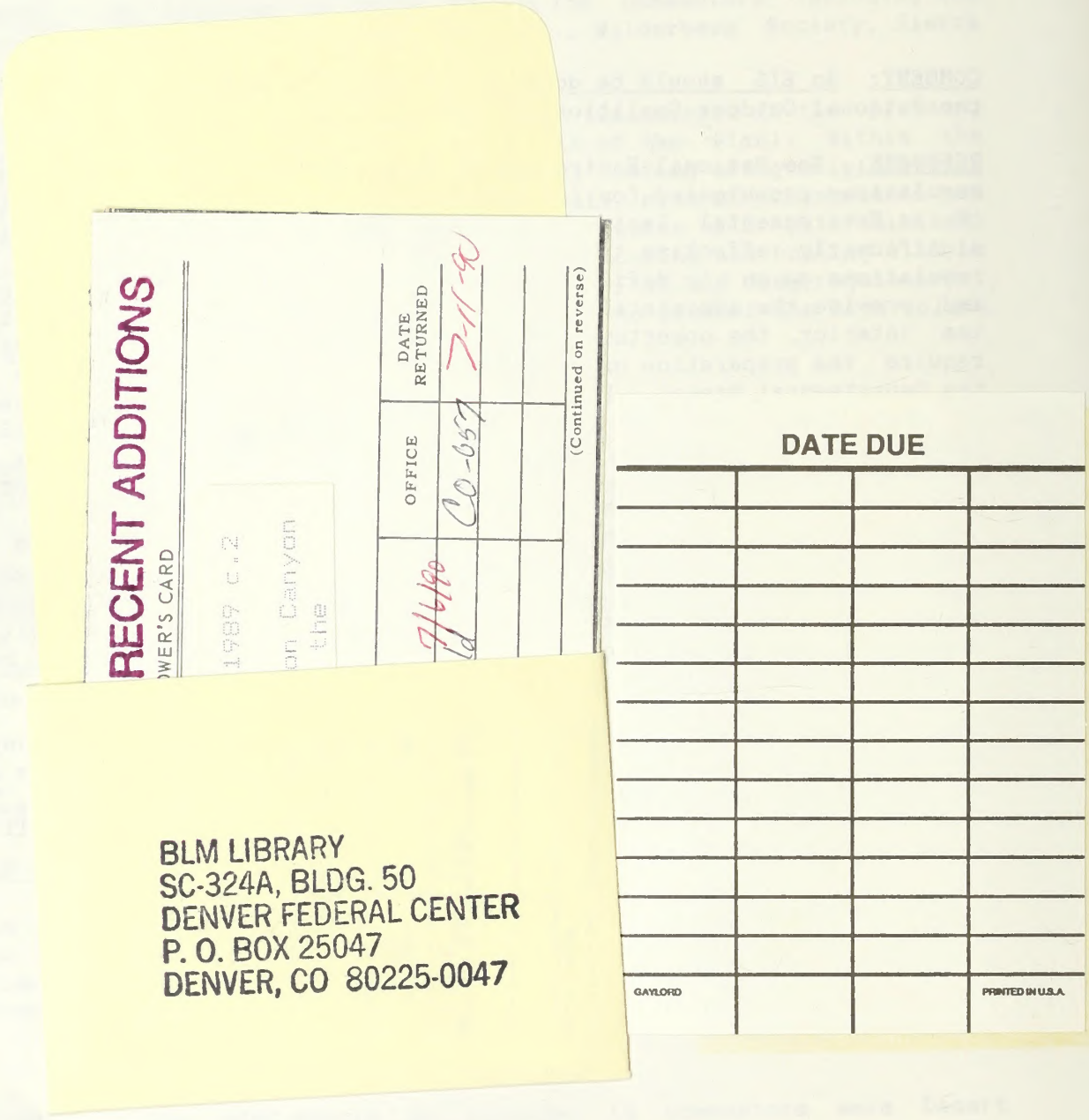
COMMENT: The ACEC should be expanded (4 commentors were Desert Survivors, Defenders of Wildlife, Sierra Club, Wilderness Society; The ACEC should not be expanded (2 commentors including the National Outdoor Coalition and CORVA).

RESPONSE: The ACEC will be expanded in order to include the entire riparian area, the visually significant portions of the adjacent uplands, and significant side canyons (see management action #1 on page 8 of the Plan). These additional areas were originally not included because they were private land. Existing and future land exchanges will turn these lands into public lands.

COMMENT: An EIS should be done on this Plan (2 commentors including the National Outdoor Coalition and CORVA).

RESPONSE: The National Environmental Policy Act of 1969 and subsequent regulations promulgated for its implementation requires the preparation of an Environmental Impact Statement (EIS) for major federal actions significantly affecting the quality of the human environment. The regulations go on to define "major federal actions" and "significance" and provide the administering agencies, in this case the Department of the Interior, the opportunity to determine which actions will normally require the preparation of an EIS. This list appears in Part 516 of the Departmental Manual. Preparation of a activity plan is not included on that list. The BLM Area Manager may determine that an EIS is required. The normal vehicle to complete this analysis is an environmental assessment. The purpose of an environmental assessment is to determine if an EIS should be prepared prior to implementing the proposed action. Once the environmental assessment is completed the manager uses it as a tool to determine the significance of the proposal when compared to similar actions, regulatory requirements and Bureau policy. The management actions defined in the plan will have a positive impact upon the resources of the planning area; they will, however, have a negative impact upon the use of off-highway vehicles.

The findings of the environmental assessment for the Afton Canyon Management Plan are that the impacts of implementation of the plan are not significant, as mitigated, and therefore an EIS is not required. The residual impacts of the proposal are slight to nonexistent as well as being temporary in nature.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